

National Defense

Budget function 050 primarily comprises spending for the military activities of the Department of Defense (DoD) and for the atomic energy activities of the Department of Energy (DOE). After experiencing declines following the end of the Cold War, spending on defense programs started to grow in the late 1990s and has increased steadily since then. Discretionary outlays rose by 54 percent between 2000 and 2004, from \$295 billion to \$454 billion. Some of that increase is associated with operations in Iraq and Afghanistan and with other activities related to the global war on terrorism. Thus far, the Congress has appropriated \$421 billion for function 050 for 2005. That level will rise significantly, however, when additional funds are provided to cover the costs of operations in Iraq and Afghanistan.

Most components of defense spending have experienced increases in recent years. Spending on pay and benefits for military personnel grew by 50 percent between 2000 and 2004, and spending on operations and maintenance—which pays for many of the day-to-day costs of military operations—rose by 65 percent. (Most of the costs associated with military operations in Iraq and Afghanistan fall into those two categories.) Spending to purchase weapon systems and ammunition has also increased in recent years, as has the pace of research and development (R&D) activities within DoD. In total, spending on procurement and R&D grew from \$89 billion in 2000 to \$137 billion in 2004. Spending on DOE's atomic energy activities also rose during that period—from \$12 billion in 2000 to \$16 billion in 2004.

Federal Spending, Fiscal Years 2000 to 2005 (Billions of dollars)

	2000	2001	2002	2003	2004	Estimate 2005	Average Annual Rate of Growth (Percent)	
							2000-2004	2004-2005
Budget Authority (Discretionary)								
Military operations in Iraq and Afghanistan and other activities related to the global war on terrorism ^a	*	13.6	17.2	78.6	88.1	b	n.a.	n.a.
Other defense activities	300.8	318.2	343.7	376.4	397.6	421.1	7.2	5.9
Total	300.8	331.7	360.8	455.0	485.7	421.1	12.7	-13.3
Outlays								
Discretionary	295.0	306.1	348.9	404.9	454.1	464.1 ^b	11.4	2.2 ^b
Mandatory	-0.5	-1.2	-0.4	*	1.8	1.8	n.a.	**
Total	294.5	304.9	348.6	404.9	455.9	465.9	11.5	2.2

Note: * = between -\$50 million and \$50 million; ** = between zero and 0.05 percent; n.a. = not applicable (because some years have zero or negative values).

a. Most of this funding has been provided in supplemental appropriation acts.

b. To date, no supplemental appropriations have been provided in fiscal year 2005 for operations in Iraq and Afghanistan or for other activities related to the global war on terrorism. When they have been provided, budget authority and outlays for 2005 will be higher.

050-01—Discretionary**Delay the Fielding Date of the Future Combat System from 2011 to 2015**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-821	-674	-1,729	-1,286	-3,029	-7,539	-26,853
Outlays	-416	-360	-31	-637	-1,332	-2,777	-24,606

The Future Combat System (FCS) program is the centerpiece of the Army's transformation efforts. The program includes the development of 18 separate ground and air platforms, sensors, and munitions that will be linked together with advanced communications networks into an integrated combat system. Because the FCS program is still in the early stages of development, its full costs are not yet known. But according to the Army's plan submitted with the President's 2005 budget, the costs from 2006 through 2020 to develop and purchase the first increment, which would equip 15—or about one-third—of the active Army's combat brigades, could approach \$90 billion.

To meet the needs of a more agile Army, the weapons developed as part of the FCS are intended to be as lethal and survivable as current systems—such as the Abrams tank and Bradley fighting vehicle—but at only a fraction of the weight. Developing such systems carries substantial risks because many of the advanced technologies needed to achieve the goals of the FCS program are not yet mature. In fact, according to the Government Accountability Office (formerly the General Accounting Office), 75 percent of those technologies were not mature in May 2003, when the FCS entered the system development and demonstration phase. Nonetheless, the Army's plan submitted with the President's 2005 budget anticipated that the decision about whether to start producing the FCS would be made in November 2008—five-and-a-half years after the program started—and would involve fielding the first unit equipped with FCS systems in the first quarter of fiscal year 2011.

This option would delay the planned initial fielding date of the FCS by four years and reduce funding accordingly. It would be similar to changes in the FCS program that

the Army announced in July 2004 that would delay the fielding of the first unit equipped with FCS systems by four years. In contrast to this option, however, the Army's restructured program would start introducing some components of the FCS program (portions of the network and some sensors and munitions) into units in 2008. Because this option would not field any of the FCS's 18 components before 2015, it would yield greater savings over the next five years—a total of about \$7.5 billion in budget authority—than the Army's restructured program would.

Given the FCS program's ambitious goals, many external observers and technical experts believe that the schedule included in the President's 2005 budget, which allows less time than DoD has needed in the past to develop a single major system, is too ambitious. The delay envisioned in this option could help reduce the risk that some technologies would not be sufficiently mature and proven prior to production. Allowing more time for development could also reduce the possibility that otherwise-achievable capabilities would have to be sacrificed to meet the current production and fielding dates.

Although the FCS program faces technical challenges, opponents of delaying the program argue that the Army should pursue its transformation into an agile force equipped with the FCS as quickly as possible. Delaying the program might suggest that the rapid transformation of the Army was not a priority, thereby undermining the service's efforts to carry out needed changes. Furthermore, the longer it takes to get the FCS into the field, the more funding the Army will need to devote to recapitalizing and sustaining its existing fleet of aging weapon systems, some of which were purchased more than 20 years ago.

050-02—Discretionary

Cancel the Future Combat System

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-2,675	-2,769	-3,820	-3,104	-4,486	-16,855	-56,247
Outlays	-1,966	-2,579	-2,128	-2,632	-3,041	-12,346	-44,147

The Army regards the Future Combat System (FCS) program as the cornerstone of its efforts to transform itself into a more agile and expeditionary force that is able to respond to crises in remote locations much more rapidly than it can today. The Army has set demanding goals for deploying its combat units anywhere in the world: 96 hours for a brigade combat team, five days for a division, and 30 days for five divisions. By contrast, an existing Army division equipped with tanks and other armored vehicles would typically take three to four weeks to deploy to many locations in Africa, Asia, or Eastern Europe. The FCS program, as envisioned by the Army, would develop the next generation of combat vehicles, which would be as lethal and survivable as current weapons but weigh much less and require far less fuel and other logistics support. The program would develop eight new combat vehicles as well as new unmanned air and ground vehicles, sensors, and munitions, all of which would be linked by advanced communications networks into an integrated combat system. According to the 2005 Future Years Defense Program, the costs from 2006 through 2020 for the first increment of the FCS, which would equip one-third of the active Army’s combat brigades, could approach \$90 billion.

This option would cancel the FCS program—except for a residual research and development effort to explore promising technologies for later use in existing systems—in favor of investing more funds in systems that are heavier but have been used with success in Iraq. This option would also convert about one-third of the Army’s heavy combat units—those that require the most lift assets and time to deploy—into units equipped with medium-weight vehicles. Those units, known as Stryker Brigade Combat Teams, have been used successfully in operations in Iraq and are more easily transported than units equipped with tanks. This option would also continue the Army’s programs to upgrade its Abrams tanks and Bradley fighting vehicles, some of which were pur-

chased in the early 1980s, so that they can continue to operate effectively for 20 more years. The cost of buying more Stryker vehicles and upgrading current systems would offset some of the \$71 billion in budget authority that would be saved over 10 years by canceling the FCS program. As a result, this option would save a total of \$17 billion in budget authority through 2010 and \$56 billion through 2015 relative to the 2005 Future Years Defense Program.

The Army’s ability to achieve its goals for the FCS program has been questioned by the Government Accountability Office and other defense experts. The technologies required to build combat vehicles that weigh only 25 percent as much as current tanks but are no more vulnerable to enemy weapons and that are more than 40 times as reliable are not yet mature. In addition, the assumption that underlies the Army’s strategy for making lightly armored vehicles as survivable as the heavily armored Abrams tank—that superior knowledge of the enemy’s whereabouts will enable U.S. combat vehicles to avoid being targeted—may need to be rethought in light of the Army’s experiences in Iraq. The threat there has come primarily from individually launched weapons in urban settings, which may be difficult to counter using any technology currently envisioned.

Opponents of this option argue that canceling the FCS program might preclude transforming the Army in any meaningful way. Without the substantial reductions in weight and logistics support promised by the FCS program, moving Army units (except for unsupported light infantry brigades) to remote locations would continue to require significant lift assets and time. Canceling the FCS program would also mean that almost half of the Army would continue to be equipped with weapon systems originally developed in the 1980s. Some of those systems, notably the Abrams tank, are inefficient in their use of fuel and require intensive maintenance. Furthermore, im-

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proving the data processing and communications capabilities of those older systems would require integrating newer components into old frames, a process that is

sometimes difficult. Finally, some opponents argue that if the United States retained old systems, it would eventually lose its technological edge and military dominance.

RELATED OPTION: 050-01

050-03—Discretionary

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Add Two New Active Army Divisions

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+7,300	+10,500	+8,900	+8,400	+8,500	+43,600	+77,600
Outlays	+2,800	+7,200	+9,700	+9,600	+9,200	+38,500	+75,700

The Army currently has 10 divisions in its active component and eight in its reserve component. Most divisions include three maneuver combat brigades; in addition, the Army has a number of separate, independent combat brigades that are not part of any division, as well as armored cavalry regiments that are similar to separate brigades. In total, the Army had 36 active combat brigades and 36 reserve combat brigades at the end of 2004. The service draws on those forces to conduct warfighting or peace-keeping missions. Almost all other Army units are intended, in some way, to support those combat brigades and divisions.

Since the mid-1990s, the Army has been increasingly called upon to keep combat brigades deployed overseas for a number of commitments, including operations in Bosnia, Kosovo, Kuwait, Afghanistan, and Iraq. To keep forces deployed overseas while preserving high levels of training and readiness, the Army rotates units through those operations. Thus, the more commitments the service has, the more often any unit (and soldier) can be expected to be deployed.

This option would increase the Army’s force structure by two divisions, or an additional six combat brigades. One of the divisions would be a heavy, mechanized infantry division, and the other would be a light infantry division. In addition to adding the two divisions, this option would create a number of support units that the new divisions would rely on in combat situations—corps support groups, artillery brigades, engineer battalions, truck companies, and the like. Some of those support units would be part of the Army Reserve or National Guard. To man all of those units, the active Army’s authorized

end strength would be increased by 57,000 personnel, and the reserve component’s end strength would be increased by 21,000 personnel. Fully recruiting, organizing, equipping, and training all of those new units would take about five years, the Congressional Budget Office estimates, and would require about \$39 billion in outlays over that period. (Option 050-05 presents a less expensive way to create those units, by eliminating some existing Army forces.)

The main argument for this option is that the Army, as currently sized, may be too small to execute all of the missions assigned to it. The service’s peacetime commitments have increased since the mid-1990s, especially in recent years with the war on terrorism. When the Army must sustain significant levels of forces deployed overseas, individual soldiers are separated from their families for long periods of time, equipment is degraded by the stress of heavy use (and in some cases, harsh environments), and units are unable to maintain the training schedule the Army expects. Some proponents of this option suggest that the current pace of deployments has exacerbated those problems to unacceptable levels and that the only way to reduce deployment tempos and preserve the Army’s readiness is to add forces to the service. In the absence of new active-component divisions, the Army would need to mobilize and deploy more reservists, increasing stress on reserve-component units and personnel. Finally, some people argue that it is inappropriate to regularly mobilize and deploy reserve-component units, that the active Army should be large enough to handle peacetime commitments, and that the reserve component should be employed only in exceptional cases.

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An argument against this option is that the cost and time needed to increase the size of the Army's combat forces could make the addition of two divisions a poor response to pressures that may only be temporary. Although the need to maintain large forces in Iraq has placed considerable stress on the active Army, that burden might be re-

duced five years from now, when the new divisions would be fully available. Increasing the force structure would also carry with it large long-term fiscal obligations, some of which would extend decades after this option was enacted.

RELATED OPTIONS: 050-04 and 050-05

050-04—Discretionary

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Increase the Army’s End Strength by 40,000

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+3,040	+3,750	+4,290	+4,420	+4,550	+20,050	+44,920
Outlays	+2,640	+3,590	+4,170	+4,360	+4,500	+19,260	+43,930

The Army’s 2005 appropriation for military personnel funds an active-duty force of 482,400 people. However, the Army is authorized by law to maintain 502,400 active-duty personnel in 2005 (an increase of 20,000 from the 2004 level of 482,400). Moreover, the Secretary of Defense has authorized the Army to maintain as many as 510,000 active-duty personnel if necessary, and all of the military services are authorized to exceed their statutory end-strength levels by up to 3 percent. Over the past three years, the size of the active Army has consistently been above its statutory authorization because of the pressure of ongoing military operations.

Additional military personnel are useful to the Army for a variety of purposes, even when those personnel are not used to establish and man new units. Not all Army units are maintained at 100 percent of their required levels in peacetime, and additional personnel could be used to improve the manning of such units. Also, some number of authorized personnel are unable to deploy for a variety of reasons (illness, personal circumstances, or medical conditions). Thus, to ensure that units can deploy with 100 percent of their required personnel and maximize their overall readiness, it can be desirable to man units at greater than 100 percent of their required levels.

This option would increase the active Army’s statutory end-strength authorization by 20,000 and fund an additional 40,000 active-duty personnel in the Army’s regular appropriation, to bring the service to an authorized and funded end strength of 522,400 active-duty personnel. Those changes would cost \$20 billion over the next five years and \$45 billion over the 2006-2015 period. They would effectively make permanent the Army’s current temporary authorization of additional personnel and its

use of the authority to exceed end-strength levels by 3 percent. The 40,000 additional personnel would be sufficient to establish one additional active-component division and supporting units. (The Congressional Budget Office has not estimated the costs to establish those units, but option 050-03 shows the costs associated with adding two divisions to the Army’s force structure.) Because the Army is already operating at a strength of at least 495,000 active-duty personnel, CBO estimates that the additional personnel required for this option could be recruited or retained within two years.

Proponents of such an increase argue that the Army’s current missions and the global war on terrorism require a significantly more ready force and that the additional personnel associated with this option would greatly improve the Army’s ability to execute its missions. They also note that the Army has already been operating with more than its 482,400 personnel for more than three years and that, to some degree, this option would formalize a variety of temporary measures. Further, with the pace of ongoing operations, individual soldiers in the Army have been deployed away from their home stations and families with increasing frequency. And therefore, increasing the size of the Army would help reduce the burden of deployments on individual soldiers.

Opponents of this option make arguments similar to those against creating additional divisions in the Army. Adding personnel to the Army carries with it substantial long-term costs, and permanently increasing the size of the Army may be a poor response to missions, such as the occupation of Iraq, that may be greatly reduced in scope within a few years.

050 050-05—Discretionary

Reduce the Army’s Short-Range Air-Defense and Field Artillery Force Structure and Use the Personnel Savings to Create New Army Divisions

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+5,700	+7,000	+3,400	+2,500	+1,900	+20,500	+26,400
Outlays	+2,000	+4,400	+4,900	+3,800	+2,800	+17,900	+25,800

Currently, the Army maintains about 14,000 personnel in short-range air-defense (SHORAD) units equipped with a variety of platforms that fire the Stinger surface-to-air missile. The Army also maintains about 80,000 personnel in field artillery (FA) units, including self-propelled cannon, towed cannon, and multiple-launch rocket system units. The Army is now engaged in a large-scale restructuring of its forces, which includes reducing the numbers of SHORAD and FA units and changing their composition while increasing the number of front-line combat units. (The Army has not yet announced the full details of that restructuring.)

This option would make larger changes than the Army is planning. It would eliminate all SHORAD units in the Army and restructure FA units into a smaller number of larger battalions (eliminating numerous brigade, battalion, and company headquarters) while doing away with corps-level cannon artillery battalions. Finally, it would eliminate some support units associated with the discontinued SHORAD and FA units. Those moves would free up about 50,000 personnel slots in the Army, the Congressional Budget Office estimates. This option would use those personnel slots, along with an additional 6,000 active-duty personnel, to create two new active Army divisions. CBO estimates that those divisions would take about five years to fully recruit, organize, equip, and train, at a cost of about \$17.9 billion in outlays over that period. (Option 050-03, by contrast, would create the divisions without making changes to other parts of the Army.)

If the personnel slots associated with the SHORAD and FA units, along with their support units, were eliminated rather than used to create new divisions, savings would be about \$11 billion higher over the next five years than shown here. Another possible use of those personnel slots would be to offset the Army’s current need for additional

personnel above what it is normally authorized, thus eliminating the need for about \$3 billion in supplemental funding for an additional 30,000 active-duty soldiers each year through 2007.

The rationale for doing away with SHORAD units is that U.S. tactical aircraft have rapidly achieved air superiority (and sometimes full air supremacy) in every conflict they have engaged in since World War II and that U.S. SHORAD units have not destroyed a hostile aircraft since 1950. However, that may be because the U.S. military relies heavily on airpower during operations and that SHORAD units frequently operate under highly restrictive rules of engagement to prevent accidental destruction of U.S. or allied aircraft.

The rationale for reducing field artillery is that Department of Defense data indicate that the volume of cannon fire required of FA units has been steadily declining for about a century, driven in part by the increasing accuracy of modern artillery and in part by the availability of numerous alternative forms of fire support (such as fixed-wing aircraft, attack helicopters, and rocket artillery). Additionally, the Army is in the advanced stages of developing several types of precision munitions for both cannon and rocket artillery. Because precision munitions are able to destroy targets with fewer rounds expended and because the overall volume of fire needed is declining, FA units can be reduced without compromising capability to fight wars.

Although the reductions under this option would be greater than those being planned by the Army, they are consistent with the rationale underlying the Army’s plans. Proponents argue that reducing the Army’s SHORAD and FA structure would free up a substantial number of personnel slots, allowing the Army to create additional combat units that would provide more capability to the

service than the eliminated support units would. Supporters also argue that reducing the SHORAD and FA structure would improve the Army's ability to deploy forces overseas because units would be smaller and lighter and would have reduced logistics requirements.

Opponents of this option argue that reducing the SHORAD structure would leave U.S. Army forces less well protected against aerial threats. In particular, in an era when U.S. opponents may acquire unmanned aerial

vehicles, the additional protection provided by SHORAD units may become more important than it has been. Regarding field artillery, cannon-based fire support has numerous advantages that are either difficult or impossible to provide with other forms of fire support—for example, cannon fire is possible in all weather conditions, unlike air support. Moreover, cannon fire has traditionally been capable of greater accuracy and a superior level of sustained fire than rocket artillery.

RELATED OPTIONS: 050-03 and 050-04

050 050-06—Discretionary

Cancel the Army’s Tactical Command and Control System

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-189	-147	-130	-135	-160	-762	-1,474
Outlays	-72	-139	-137	-132	-142	-621	-1,340

Combat operations in Iraq have presented the first battle-field test of the Army’s major modernization initiative of the past decade: the effort to introduce modern comput-ers and communications equipment into all elements of the fighting force. That effort, comprising about 100 dif-ferent programs and usually called Army digitization, is harnessing modern electronics to increase the Army’s awareness of the location and disposition of all of its and the enemy’s forces. By providing that increase in situation awareness, digitization is meant to enable the Army to achieve military objectives more swiftly while minimizing casualties.

This option would cancel the subset of digitization pro-grams that have performed poorly in Iraq. Specifically, it would terminate the Army Tactical Command and Con-trol System (ATCCS), a group of four programs that have fared badly in after-action reports written by officers re-sponsible for assessing the performance of command-and-control systems during the conflict. (For the past 25 years, the ATCCS had comprised five programs, but the Army terminated funding for one of them in its 2005 budget request.) The four programs are the Maneuver Control System (MCS), the All Source Analysis System (ASAS), the Army Field Artillery Tactical Data System (AFATDS), and the Forward Area Air Defense Com-mand and Control (FAADC2) system. The MCS is the clearinghouse for data transfer and data display for all of the ATCCS’s programs. Additionally, it maintains spe-cific information on Army maneuver forces. The ASAS focuses on the location and status of enemy forces plus the status of U.S. reconnaissance assets. The AFATDS is used for controlling the employment of artillery fire against enemy forces, and the FAADC2 controls Army forces employed to counter enemy air threats.

The Department of Defense has not released information on funding for ASAS, AFATDS, and FAADC2 past 2009. But if funding continued at current levels and MCS was phased out in 2011 as planned, this option would save approximately \$621 million in outlays over the next five years and about \$1.3 billion over 10 years relative to the 2005 Future Years Defense Program.

The ATCCS comprises computer software hosted on workstations that are linked by local area networks em-ploying various controller devices and file servers. One problem that arose during battle conditions was that the equipment composing ATCCS could not be moved rap-idly enough to keep pace with the ongoing operation. In addition, users noted shortfalls in software capability and in some cases found off-the-shelf substitutes. Those sub-stitutes could be characterized as having capabilities that substantially overlapped the ATCCS, had mobility more appropriate to the pace of operations, were more reliable, and were more flexible with regard to the changing com-munications links involved in the operation.

Proponents of this option note that after-action reports by soldiers in the Army’s V Corps, the 101st Airborne Di- vision, and the 3rd Infantry Division cited MCS, ASAS, and AFATDS as inadequate and included recommenda- tions to either “start over” or cancel those programs. FAADC2 was rarely mentioned, possibly because the tac- tical mission of air defense artillery has effectively shifted to the Air Force since the Korean War. In addition, the off-the-shelf substitute software used by soldiers during operations in Iraq is now fielded as a workable substitute for the yet-to-be-demonstrated capability of ATCCS and is undergoing improvements in the Army.

Opponents of this option argue that the capability of U.S. forces to maintain awareness of enemy forces is widely viewed as inadequate and that terminating ATCCS would jeopardize attempts to overcome that deficiency. They also argue that testing demonstrates that the

ATCCS's capability has been continually improving and that experience gained during wartime operations will be used with the ongoing development programs to correct identified deficiencies.

RELATED CBO PUBLICATION: *The Army's Bandwidth Bottleneck*, August 2003

050-07—Discretionary**Reduce Procurement of Virginia Class Attack Submarines**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+200	-330	-450	-2,550	-2,480	-5,610	-25,960
Outlays	+100	+70	-80	-360	-900	-1,170	-13,890

Note: Savings are calculated relative to the President's 2005 budget and associated Future Years Defense Program. The FYDP associated with the President's 2006 budget was not available when this report was prepared. Savings would be lower if calculated relative to that FYDP.

In 1999, the Chairman of the Joint Chiefs of Staff (CJCS) released a study calling for a force of 55 to 68 attack submarines (SSNs), of which 18 should be the new Virginia class, by 2015. Subsequently, the Department of Defense decided that 55 submarines would be the goal, meeting both the minimum peacetime and wartime force levels identified in the study. To modernize its submarine force, the Navy had until recently planned to buy one Virginia class submarine per year from 2005 to 2008 and two or three per year between 2009 and 2015. It also plans to retire early one Los Angeles class submarine in 2006. That submarine would still have years of useful life remaining, however, if its nuclear reactor was refueled.

This option would refuel the reactor to keep that Los Angeles class submarine in service and would procure 10 Virginia class submarines at a rate of one per year through 2015, nine fewer than planned. In addition, the option would make permanent the Navy's plan to temporarily base three submarines in Guam and would transfer six additional submarines there by 2012 to take advantage of having those subs be 3,300 nautical miles closer to their operating areas, thereby increasing their number of operating days. Those changes would cost \$200 million in budget authority in 2006 but would save about \$5.6 billion in budget authority over five years and nearly \$26 billion over the 2006-2015 period. Those savings would come from buying nine fewer Virginia class submarines and operating fewer of them (a savings of about \$27.5 billion over 10 years) offset slightly by increased costs for refueling one Los Angeles class submarine instead of retiring it (about \$200 million), operating that submarine (about \$300 million), operating more submarines in Guam instead of the continental United States (about \$300 million), and improving the infrastructure in Guam

(about \$1 billion). This option is similar to the Administration's recently announced proposal to reduce procurement of Virginia class submarines to one per year through 2011. (Compared with that proposal, the savings provided by this option would be substantially lower.)

To help bridge the gap between force levels and requirements, the Navy announced in 2001 that it would begin basing three attack submarines in Guam. Two have already been transferred, and a third will join them in 2005. By moving those ships 3,300 nautical miles west of Pearl Harbor and employing an operating concept different from the one used for subs based in Hawaii or the continental United States, the Navy can eventually get about three times the number of mission days from Guam-based SSNs as from other SSNs. (On its first deployment, a Guam-based submarine provided a number of mission days equivalent to only two submarines based in the continental United States. Navy officials believe that once training and maintenance schedules are refined, that ratio will be close to three to one.) However, the attack submarines being transferred to Guam will reach the end of their service lives around 2015, and the Navy has not said whether they will then be replaced by other submarines, although press reports indicate that the Navy is considering transferring additional submarines there. Basing nine attack submarines in Guam indefinitely, as this option envisions, would require the construction of additional infrastructure to make the submarine facilities there equivalent to a submarine base. The Navy estimates that the cost for that infrastructure would total about \$1 billion. Infrastructure improvements would include new family housing, new maintenance facilities, expanded training facilities, and improved dry docks and berthing piers.

This option would maintain a force of at least 52 SSNs through 2015, equivalent in the number of mission days they could perform to a force of 70 attack submarines (including 18 Virginia class) based only in the United States. Under the Navy's 2005 FYDP, the force would have 54 attack submarines by 2015, including 12 Virginia class, but would provide mission days equivalent to only 60 SSNs, assuming the Navy kept three submarines in Guam.

Proponents would argue that in addition to saving money, this option would improve cost-effectiveness. Although new SSNs cost around \$2.5 billion apiece (in 2005 dollars), they spend an average of 36 days per year—or 10 percent of their 33-year service life—on-station performing missions. Like other Navy ships, SSNs spend the rest of their service life in training missions, port calls, transit, and maintenance. Consequently, the cost per additional mission day provided by building and operating a new attack submarine is \$3.4 million (in 2005 dollars) per year. But the cost per additional mission day of transferring an SSN to Guam is only \$0.3 million.

This option would have several disadvantages, however. First, with fewer submarines based in San Diego and Pearl Harbor, having SSNs available to train with carrier battle groups and support them during their deployments might be more difficult. Attack submarines would also be less available to assist other Navy units, such as ones practicing antisubmarine warfare.

Second, because existing submarines are less capable than new Virginia class submarines, an SSN force with fewer Virginias might be less capable of prosecuting a major war. However, that difference would probably be substantial only if the United States fought a sophisticated opponent with potent antisubmarine warfare capabilities.

Third, because Los Angeles class submarines were built at rates of three or four per year in the 1980s and therefore will start retiring at the same rate after 2015, by the late 2020s, a construction rate of one submarine per year would leave the Navy with about 26 submarines. That number might prove insufficient in the event of a war. The CJCS study stated that 55 attack submarines were needed to meet wartime requirements.

Fourth, a potential difficulty with this option—as with the Navy's decision to base three submarines in Guam—is the quality of life for sailors and their families on that island. Guam does not offer the same opportunities for family members and crews as submarine bases in San Diego and Pearl Harbor do. At those large bases, it is relatively easy for members of a submarine crew to find other jobs in the Navy when they finish their sea tours. Thus, they and their families can put down roots and stay in one place longer than a few years. Such opportunities are few in Guam. Still, if the Navy found that Guam-based duty led to much lower levels of retention for submariners, monetary bonuses might help.

050-08—Discretionary**Cancel the DDX Destroyer and the Littoral Combat Ship and Build New Frigates Instead**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+1,380	-1,870	-1,780	-3,890	-5,040	-11,200	-28,820
Outlays	-220	-300	-520	-920	-2,030	-3,990	-21,050

Note: Savings are calculated relative to the President's 2005 budget and associated Future Years Defense Program. The FYDP associated with the President's 2006 budget was not available when this report was prepared. Savings would be lower if calculated relative to that FYDP.

The Navy is developing a new destroyer, the DDX, as well as a new surface combatant for inshore operations, called the littoral combat ship (LCS). The DDX, which is expected to carry up to 80 missiles and two advanced gun systems, is being designed principally to attack targets on land, although it will be able to perform other missions. A small ship, the LCS is expected to counter either diesel-electric submarines; mines; or small, fast-attack craft in coastal regions—missions for which the Navy believes a large ship like the new destroyer is not suitable. Although the Navy has not yet stated how many of each ship it wants, a report on long-term ship construction plans, which the Navy sent to the Congress in May 2003, indicated that the service wanted 24 DDXs and 56 littoral combat ships. The cost of buying those ships would total \$57 billion (\$43 billion for the DDXs and \$14 billion for the LCSs), the Congressional Budget Office estimates.

This option would cancel the Navy's plans to build a new destroyer and littoral combat ship in favor of building a new frigate, a ship that would be considerably smaller than the DDX but larger and more capable than the LCS. Relative to the plans outlined in the Department of Defense's 2005 Future Years Defense Program, this option would save \$11 billion in budget authority over the next five years and about \$29 billion between 2006 and 2015. (CBO did not include savings from research and development funding as a result of canceling the DDX because, according to the Navy, many of the new technologies being developed for that ship would eventually be used in other ship programs, including the future carrier, the Virginia class submarine, and the future cruiser. CBO

assumed that the new frigate would incorporate those technologies as well.)

Under this option, the Navy would initially purchase 22 frigates through 2015 and eventually buy a total of 38. The first ship would not be ordered until 2009 to allow the Navy time to reorient its ship-design efforts toward a new frigate. If the Navy employed rotational crewing on the new frigate, a program of 38 ships would be sufficient to provide full-time presence with a squadron of four ships in the European, Indian Ocean, and western Pacific operating areas. (Rotational crewing involves deploying a ship for 18 months and rotating a new crew to it every six months. That system increases the overall presence the ship provides by about one-third compared with the current system, in which the ship returns to its base and is replaced by a new ship deploying.) In addition, to sustain the industrial base for surface combatants until the new frigate was ready for production, this option would buy an additional seven DDG-51 destroyers, at a rate of two per year between 2006 and 2008 and one in 2009.

Some of the larger LCS designs under consideration could be scaled up and used as a basis for the new frigate. Alternatively, the national security cutter of the Coast Guard's Deepwater program is the size of a frigate—about 4,000 to 5,000 tons—and perhaps could be used as a basis for the Navy's frigate. However, the new frigate would require a substantially different combat system and payload than the national security cutter. In design, the frigate would need both a substantial payload to accomplish its multiple missions and long endurance. Consequently, the ship's maximum speed would have to be more in line with that of existing warships—about 30

knots—rather than with the goal of 50 or more knots for the LCS program. (In ship design, payload, endurance, and speed are traded off against one another. It is difficult to design a ship with high speed, long endurance, and a large payload. The LCS design favors speed at the expense of endurance and payload. The frigate envisioned in this option would have greater emphasis on payload and endurance than on speed.)

Supporters of this option argue that the most likely maritime challenges that the United States and its allies will face include terrorism, drug smuggling, violations of economic sanctions, illegal immigration, and arms trafficking. The DDX, which appears to be designed for major wars, would be an exceptionally large and expensive ship to use for those missions. With a reported displacement of about 14,000 tons, the DDX would be larger than any other surface combatant in the Navy. The high cost of the ship appears to be driven by its large size to accommodate the features that make it difficult to detect and its two advanced gun systems—capabilities not particularly useful in the aforementioned missions.

In addition, supporters argue that in pursuing the LCS, the Navy went too far in the opposite direction, designing a ship that may be too small. The LCS would be a single-mission ship with a modular combat system, which would be tailored to the mission it was expected to take on. If the LCS was sent to counter mines, it would have a mine countermeasures payload. If it was sent to counter diesel-electric submarines, it would have an anti-submarine-warfare suite. How easily or effectively the Navy could change mission modules should the threat require it is unclear. A frigate-sized ship, by contrast, would have enough payload, along with more-robust self-defense systems, to perform all three missions simultaneously, making it easier to address multiple threats. Further, the Navy's experience with small warships has not

been encouraging. Such ships usually have insufficient payload and range, poor handling and stability at sea, and short longevity. Frigates in the Navy today, such as the Oliver Hazard Perry class, have held up much better and have remained in the fleet much longer than did smaller craft such as the Cyclone Class patrol ship (which was discarded by the service after 10 years) or high-speed hydrofoils (which the Navy experimented with in the 1970s).

Canceling the DDX program would have a number of disadvantages, however. First, the program is highly innovative. The destroyer is intended to have a completely new design; to use a new, efficient power system; and to operate with a relatively small crew. Other development programs could benefit from the research and innovation being pursued in the DDX program. Restructuring that program could disrupt and slow the process of innovation in ship design for the Navy for several years, although many of the technologies being developed for the DDX could be used effectively in the new frigate.

Second, the fire-support capabilities available to support the Marine Corps would be reduced in the absence of the DDX destroyer. The largest gun in the Navy today has a five-inch diameter. The 155-millimeter gun on the DDX (slightly larger than a six-inch gun) would provide better fire support for amphibious landings and Marine operations ashore. The 155-millimeter guns would have a much longer range and be three times as powerful as the current five-inch guns. However, it has been more than 10 years since a Navy ship has carried a larger gun. In the wars that the United States has fought over the past 10 years, the need for a larger naval gun has been unclear. Furthermore, a larger gun may be unnecessary given improvements in the missile technology and precision munitions carried by existing as well as new Navy and Marine strike aircraft, such as the Joint Strike Fighter.

RELATED OPTION: 050-09

RELATED CBO PUBLICATION: *Transforming the Navy's Surface Combatant Force*, March 2003

050 050-09—Discretionary

Reduce the Number of DDX Destroyers to Six

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	0	-1,290	-970	-2,300	-2,440	-7,000	-28,350
Outlays	0	-140	-390	-720	-1,210	-2,460	-16,860

Note: Savings are calculated relative to the President’s 2005 budget and associated Future Years Defense Program. The FYDP associated with the President’s 2006 budget was not available when this report was prepared. Savings would be lower if calculated relative to that FYDP.

The Navy’s proposed new destroyer, currently designated the DDX, is a large warship designed to provide volume fire support to Marine Corps units conducting operations ashore. With a reported displacement of 14,000 tons, it will be larger than any other surface combatant in the Navy. It will carry up to 80 land-attack missiles and two 155-millimeter advanced guns to provide gunfire support up to 100 nautical miles away. In the long-term ship construction plan sent to the Congress in March 2003, the Navy proposed buying 24 DDXs between 2005 and 2017. Those ships would cost a total of \$43 billion, the Congressional Budget Office estimates. At other times, senior Navy officials have suggested other quantities for the DDX program.

Under this option, only six DDXs would be built. That number would be sufficient to provide the full-time presence of one DDX each in the western Pacific and the Arabian Sea. To achieve that level of presence, the Navy would have to base one DDX in Japan (along with the other Navy ships already there) and employ a rotational crewing concept for the ship deployed in the Arabian Sea. (Rotational crewing involves deploying a ship for 18 months and rotating a new crew to it every six months. That practice increases the ship’s overall presence by about one-third compared with the current system, in which the ship returns to its base and is replaced by a new ship deploying.) Under those assumptions, the Navy would have a DDX available in the regions of the world that were most likely to require its capabilities. This option would not save any money in 2006 but would save about \$7 billion in budget authority through 2010 and \$28 billion through 2015. An additional \$4 billion to \$5 billion in savings would be realized over the 2016-2017 period from not buying the last four DDXs in the

Navy’s long-term plan. This option is consistent with the Administration’s 2005 budget plan to buy only five DDXs through 2011, at a rate of one per year starting in 2007, with the number of additional ships to be bought unspecified. Compared with that proposal, the savings provided by this option would be substantially lower.

Some supporters of trimming the DDX program cite recent experience as a guide: in the major conflicts that the United States has fought since the first Gulf War, there has been little or no use of naval gunfire. Thus, it is not clear that the Navy needs a large number of ships designed primarily, though not exclusively, to provide naval gunfire support for operations on land. However, in the event that such a capability was required in a future conflict, this option would ensure that one DDX would already be on-station. And under the Navy’s new concept for wartime surge of ships, an additional two or three DDXs could be sent to the theater of operations within 90 days. In addition, continuing improvements in the precision munitions that tactical aircraft carry may reduce the need for volume surface fire from Navy ships.

Opponents of curtailing the program argue that describing the DDX primarily as a gunfire support ship may understate its capabilities and usefulness to the future Navy. The ship will be difficult to detect and have a range of systems designed to defeat anti-access threats in the world’s coastal regions, a capability that many analysts and defense officials regard as crucial to maintaining the viability and effectiveness of U.S. military forces in the future. The ship will have a new power and electrical distribution system that will enable it to carry new and more powerful weapons in the future, thus expanding its capabilities and the missions it can perform. For example, if

the Navy is successful in developing an electromagnetic rail gun for the DDX, the ship may eventually be able to provide fire-support capability beyond 200 nautical miles. (A rail gun uses magnetic fields to hurl a solid metal projectile at a target at several times the speed of sound. The projectile's destructive power is caused by the kinetic energy created by the speed at which it hits, rather than by an explosive.) Further, the United States may find

itself conducting more operations that require fire support than it has in the recent past. As the Marine Corps adapts its warfighting doctrine to rely more on logistical and fire support from ships—thereby cutting the amount of support and materiel that needs to be put on land—the role of the DDX may become more important. In that event, six DDXs might prove insufficient to perform all of the missions that could be required of the ships.

RELATED OPTION: 050-08

RELATED CBO PUBLICATION: *Transforming the Navy's Surface Combatant Force*, March 2003

050-10—Discretionary**Cut the Number of Aircraft Carriers to 11 and the Number of Navy Air Wings to 10**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-2,090	+20	-500	-510	-520	-3,600	-6,470
Outlays	-740	-730	-1,020	-500	-520	-3,510	-6,350

Note: Savings are calculated relative to the President's 2005 budget and associated Future Years Defense Program. The FYDP associated with the President's 2006 budget was not available when this report was prepared. Savings would be lower if calculated relative to that FYDP.

The Administration's 2005 defense plans call for maintaining a fleet of 12 aircraft carriers and 11 active-duty naval air wings. (The number of active air wings is one less than the number of carriers because, at any time, one of the Navy's carriers is usually undergoing a major overhaul.) Aircraft carriers are also accompanied by a mix of surface combatants (usually cruisers and destroyers) and submarines to defend against aircraft, ships, and submarines that might threaten the carrier. In the past, such a grouping was called a carrier battle group and notionally included six surface combatants. Currently, the force is called a carrier strike group and includes three surface combatants, one attack submarine, and one logistics support ship.

This option would reduce the carrier force by one ship and one air wing, leaving a total of 11 and 10, respectively. It would do so primarily by immediately retiring a Nimitz class carrier, the *Carl Vinson*, and a number of planes equivalent to most of that carrier's air wing. Those changes would save the refueling and overhaul costs that the Navy is expected to incur in 2006 and the operating costs associated with the ship and about 60 planes. Under this option, the other ships associated with a carrier strike group would be retained and deployed to support other Navy missions. Overall, this option would save nearly \$2.1 billion in budget authority in 2006 and about \$3.6 billion through 2010. Additional savings of about \$3 billion over 10 years would be possible if the Navy decided to decrease planned purchases of F/A-18 E/F or Joint Strike Fighter aircraft to reflect the reductions in inventory requirements for air wings.

As an alternative to this option, the *Carl Vinson* could be refueled and its air wing kept active, and the CVN-21 carrier replacement program could be delayed for five years. The first ship of that new class of aircraft carriers is expected to be authorized in 2007 and commissioned around 2013, when it would replace the *Enterprise*, which would have reached the end of its service life. Delaying the CVN-21 would mean that the *Enterprise* would not be replaced and that its air wing would be retired in 2013, at which point the carrier force would fall to 11 ships. Such an approach would generate more savings than retiring the *Carl Vinson* but would substantially reduce the anticipated workload at the Northrop Grumman Newport News shipyard in Virginia. Northrop Grumman is the only U.S. shipbuilder capable of building aircraft carriers. Current long-term shipbuilding plans assume construction of an aircraft carrier every five years over the next 30 years.

Proponents of this option argue that the Navy could make do with fewer aircraft carriers. The 11 remaining carriers in the fleet would still provide a force of at least seven carriers within 90 days to fight a major theater war under the Navy's new concept for surging ships, the Fleet Response Plan. Recent experience suggests that the Navy mobilizes five to seven carriers to fight a major theater war. In addition, although the Navy would lose some ability to provide carrier presence overseas, 11 carriers would be enough to provide full-time presence in the western Pacific and the Arabian Sea, with the Mediterranean covered a little less than three months out of the year. Some analysts have argued that because the security environment in the Mediterranean has improved dramatically, that region no longer requires continuous or near-

continuous presence by an aircraft carrier. And should the need arise for one, the carrier in the Arabian Sea could be sent there quickly via the Suez Canal.

Other developments may also boost the effective presence of the Navy's carrier force. Some senior Navy officials have stated that rotational crewing concepts may eventually lead to more carrier presence. (Rotational crewing involves deploying a ship for 18 months and rotating a new crew to it every six months, which increases the overall presence that the ship provides by about one-third.) The Navy is also considering whether basing a carrier in Guam would be feasible and cost-effective. A Guam-based carrier would both boost the presence in the western Pacific and allow for more-effective presence in the Mediterranean. Finally, the Air Force's new Air and Space Expeditionary Force concept allows greater flexibility in deploying squadrons of airplanes around the globe to key trouble spots very quickly, thus relieving some of the pressure on the Navy's carrier fleet.

Opponents of this option disagree with those arguments. They say that by giving up an aircraft carrier, the Navy would significantly reduce its ability to fight two major wars at the same time, the benchmark for defense planning throughout the 1990s. Further, the European, Central (Middle East), and Pacific Commands all have a re-

quirement for full-time carrier presence in their regions. Under current crewing and operating practices, 15 carriers would be needed to meet that goal. In addition, the United States has fought two wars since 1990 in the Mediterranean area (in Bosnia and Kosovo) that involved the support of carrier battle groups. Thus, opponents would argue, now would not be a good time to reduce the presence provided by naval forces in that region or any other, because those forces have the flexibility to operate anywhere in the world without the permission of another country. The Air Force's Air and Space Expeditionary Force would require the permission and support of a host country, which might not be available in the event of a conflict.

Opponents of this option also argue that it is not clear that new rotational crewing concepts or a forward base in Guam would prove practicable for an aircraft carrier. The rotational crewing concepts that the Navy is currently testing are an experiment and have only included surface combatants. Rotating a new crew of 300 to a forward-deployed surface combatant is a less complex task than rotating the 5,000 personnel of an aircraft carrier and its air wing. In addition, even if a new base in Guam proved to be a good idea (and it might not be), it would take years to build and probably require billions of dollars in new investment on the island.

050 050-11—Discretionary

Gradually Reduce the Number of Expeditionary Strike Groups to Eight

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	0	-3,590	-1,230	-1,250	-4,140	-10,210	-14,970
Outlays	0	-390	-920	-1,130	-1,660	-4,100	-12,840

Note: Savings are calculated relative to the President’s 2005 budget and associated Future Years Defense Program. The FYDP associated with the President’s 2006 budget was not available when this report was prepared. Savings would be lower if calculated relative to that FYDP.

Expeditionary strike groups (ESGs) are new task forces that the Navy is forming by reorganizing the way it deploys amphibious ships, surface combatants, and submarines. The Navy’s amphibious ships (those designed primarily to transport and deploy U.S. Marines) were organized into 12 amphibious ready groups. Each amphibious ready group usually comprised three amphibious ships and carried a battalion-sized Marine expeditionary unit, operating primarily without other elements of the fleet. Under the ESG model, however, the Navy assigns three surface combatants and an attack submarine to operate with those three amphibious ships. The logic of that reorganization is that the Navy increasingly needs to be in more places with forces that can perform a variety of missions. An ESG carries the same number of Marines as an amphibious ready group. One or two of the surface combatants are equipped with the Aegis combat system to provide fleet air defense. The surface combatants and attack submarine also carry Tomahawk land-attack cruise missiles, which can strike targets more than 1,000 nautical miles away. The Navy envisions that, unlike an amphibious ready group or surface combatants operating alone, an ESG will be able to perform almost any mission that does not require the presence of a large aircraft carrier.

This option, which would affect only the amphibious ships of ESGs, would reduce the total number of expeditionary strike groups to eight from the Navy’s force of 12. Under this option, amphibious ships would not be retired immediately but instead would simply not be replaced as they reached their scheduled retirement dates. Thus, the number of ESGs would fall from 12 today to 10 by 2015 and then to eight by 2021. This option would generate savings of about \$13.3 billion in procurement costs and

\$1.7 billion in operating costs between 2006 and 2015. (This option would not reduce the number of surface combatants or attack submarines in the fleet, because those associated with ESGs would be redeployed to support other Navy missions. However, if the Navy also decided not to replace the 12 surface combatants and four submarines associated with the four eliminated ESGs, that decision could result in substantial additional savings.)

Specifically, this option would reduce purchases of the LPD-17 amphibious transport dock to eight from the current plan of 12 and delay the need for constructing a new replacement for the remaining amphibious assault ships for at least 10 years. Under the 2005 Future Years Defense Program, the Navy expected to buy one LPD-17 each year through 2010 and one new amphibious assault ship, the LHA(R), in 2007, 2010, 2013, and 2016. Under this option, the Navy would cancel the planned purchase of four LPD-17s from 2007 to 2010, as well as the three LHA(R)s from 2007 to 2015. (The LHA(R) purchased in 2016 would also be canceled, but those savings fall outside the time period considered in this option.) The LPD-17 expected to be authorized in 2006 would be retained. (In its 2006 FYDP, however, the Administration proposes reducing the number of LPD-17s to nine; compared with that plan, this option would save less than the amounts shown here.)

Both the LPD-17 and the LHA(R) are intended to replace classes of ships that are scheduled to retire over the next decade. The LPD-17 will replace the LPD-4 class ships, which are reaching the end of their 40-year service life. The four ships of the LHA(R) program would replace four of five ships of the existing LHA Tarawa class,

which are already serving beyond their originally planned service life. The first LHA will be replaced by the LHD-8, a Wasp class amphibious assault ship currently under construction. Once that occurs, each of the Navy's 12 expeditionary strike groups will have one LPD-17; in addition, four of the ESGs would have one LHA(R) apiece and the remaining eight would have a Wasp class amphibious assault ship.

Although the LHA(R) is not yet under construction, the LPD-17 program has experienced significant cost growth. Per-ship (unit) costs for the LPD-17 have grown by more than 50 percent, requiring the Navy to report a Nunn-McCurdy breach in 2002. (Under current law, the Secretary of Defense must report when a major weapons program is experiencing unit cost growth of 25 percent or more. The Secretary also must certify that the program is in the national interest and that the cost and management of the program is now under control. The cost growth reported under current law is called a Nunn-McCurdy breach, named after the former Members of Congress who sponsored the provision.) Originally expected to cost \$830 million each, a class of 12 LPD-17s is now expected to have an average cost per ship of about \$1.3 billion. Procurement of the first ship of the class was delayed for several years as a result of problems with the program's management, according to both the Government Accountability Office and the Navy.

Proponents of this option argue that it is not clear that the Navy needs all 12 LPD-17s and four LHA(R)s. The Navy and Marine Corps are currently working on new warfighting concepts, which may involve new types of ships. Depending on what the Navy ultimately decides to pursue, it may not need as many LPD-17s as thought when the program was conceived. (For example, if the Navy decides to buy new, large, aviation-capable maritime prepositioning ships, the need for all 12 LPD-17s is less compelling.)

In addition, several senior Navy officials have stated that rotational crewing concepts, which increase the amount of time that ships spend on-station, could reduce the requirement for ESGs to eight. (Rotational crewing involves deploying a ship for 18 months and rotating a new

crew to it every six months. That process increases the overall presence the ship provides by about one-third compared with a ship that returns to its base and is replaced by a new ship going on deployment.)

Furthermore, this option would build enough LPD-17s and retain a sufficient number of amphibious assault ships to provide one each to eight expeditionary strike groups. Moreover, the gradual reduction, rather than the immediate retirement, of a large number of ships would provide a transition for the Navy as it developed its rotational crewing concepts and a hedge in case those concepts did not work or a decision was made later to keep a larger number of ESGs.

Opponents of this option argue that the demand for naval presence around the globe in the form of expeditionary strike groups has not abated over the past 10 years. Thus, they say, the Navy needs to maintain 12 ESGs, and the LPD-17 and LHA(R) will be an integral part of that force. In addition, both the LPD-17 and LHA(R) will be far more capable than their predecessors and, particularly, provide better living conditions for the crews and troops on board.

Opponents also argue that the rotational crewing concepts being contemplated for the ESGs are still experimental and that applying them to amphibious ships populated by large crews and large numbers of Marines would be complicated, if not impossible. Further, those crewing concepts would increase only the peacetime presence that the remaining ESGs would provide; in wartime, when the actual number of ships matters, the force would be smaller. For example, the Navy's requirement for amphibious lift in wartime (moving and deploying the assault echelons of two-and-a-half Marine expeditionary brigades on amphibious assault ships) would not be achievable under this option.

Finally, cutting the number of LPD-17s and LHA(R)s could also affect the shipyards involved in their construction, depending on where and how many of the new types of ships that would substitute for the LPD-17 would be built. LPDs and LHAs are usually produced by

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Northrop Grumman Ship Systems in its Avondale, Louisiana, and Ingalls, Mississippi, operations. If planned procurement of new amphibious ships was reduced by the

quantities suggested in this option, the workload at those shipyards would be affected. Avondale and Ingalls currently employ 7,000 and 12,000 people, respectively.

RELATED CBO PUBLICATION: *The Future of the Navy's Amphibious and Maritime Prepositioning Forces*, November 2004

050-12—Discretionary**050****Reduce the Trident Submarine Force to 12 and Buy 48 Fewer D5 Missiles**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-150	-20	-190	-210	-210	-780	-2,200
Outlays	-80	-80	-90	-150	-190	-590	-2,140

Until recently, the Navy maintained a fleet of 18 Trident submarines. Eight of those submarines were based in Bangor, Washington, and the other 10 were stationed in Kings Bay, Georgia. All of the submarines at Kings Bay and two of the submarines at Bangor deployed 24 newer, more capable D5 missiles that, under the Strategic Arms Reduction Treaty, each carried eight nuclear warheads. The six remaining submarines stationed at Bangor deployed 24 older C4 missiles that carried six nuclear warheads apiece. In all, about 3,200 warheads were deployed on those 18 submarines.

The Navy has begun converting four of the Trident submarines that carried C4 missiles to a conventional (non-nuclear) role. Two of the conversions began in 2003, and the remaining two started in 2004. The C4 missiles that are being removed from the submarines will be transported to a Department of Defense (DoD) facility for disposal. The warheads removed from those missiles will either be reloaded onto the newer D5 missiles or stored at a DoD facility. The Navy's plan to pursue those conversions was announced in January 2002 after the Nuclear Posture Review, which concluded that a force of 14 Trident submarines would be sufficient. Under that plan, each of the remaining 14 Trident submarines will be equipped to carry 24 D5 missiles by 2008. According to the Navy, an average of two submarines a year will undergo a major overhaul, during which they will not carry any missiles. The 12 other operationally deployed submarines will carry a total of 288 D5 missiles and about 2,300 warheads (about 192 warheads on each submarine).

The Administration plans to buy a total of 540 D5 missiles—288 for the Trident submarines and the other 252 for flight tests and spares. By the end of 2004, the Navy had purchased 420 missiles; it plans to buy the remaining 120 missiles by 2013. The Congressional Budget Office assumes that to meet the limits of the Moscow Treaty's

goal of no more than 2,200 warheads, the 12 operationally deployed submarines would carry a total of 1,152 warheads, or about 96 warheads on each submarine.

This option would retire the two remaining Trident submarines that have not yet been upgraded to carry D5 missiles (one of those upgrades started in 2005 and the other is planned for the following year). The option would also cancel the planned purchase of 48 D5 missiles because fewer missiles would be needed to support a 12-submarine force. To keep a similar number of warheads overall, the smaller Trident force would carry 111 warheads on each submarine instead of 96. Compared with the Administration's 2005 Future Years Defense Program, this option would save about \$780 million in budget authority over the 2006-2010 period and \$2.2 billion over 10 years. Specifically, by retiring the two submarines early, the Navy would save about \$0.6 billion from reduced operations during the 2006-2015 period, net of the costs to retire the submarines. In addition, retiring the submarines by 2007 would save \$1.7 billion in planned upgrades and purchases over that 10-year period. (That figure results because not overhauling the two submarines to accommodate the D5 missiles would save about \$300 million and not buying the D5 missiles that would be deployed on the overhauled submarines would save about \$1.4 billion.)

Purchasing 48 fewer D5s would have several drawbacks, however. The Navy recently extended the service life of Trident submarines from the original 30 years to 44 years and has begun to extend the service life of D5 missiles. That program involves redesigning the guidance sets and retrofitting every missile with them, requiring additional flight tests to judge the guidance sets' performance. Those flight tests are scheduled to take place over the 2008-2013 period. If production of D5 missiles ceased before then (as it would under this option) and more D5s

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were required later for the flight test program, reopening production lines could be costly.

Opponents of this option also argue that loading more warheads on existing missiles would reduce their range and lessen the flexibility of the submarine force. In addition, cutting the number of operationally deployed submarines from 12 to 10 could increase their vulnerability to attack by enemy antisubmarine forces. Nevertheless, some people would consider the capability retained under

this option to be sufficient to deter nuclear war. Fewer submarines and less targeting flexibility might not reduce the force's nuclear deterrent: 1,152 warheads deployed on 288 missiles might not deter an adversary notably more than the 1,110 warheads on 240 missiles envisioned in this option. Moreover, the end of the Cold War and the amount and projected state of Russia's nuclear forces may have weakened the rationale for the United States to increase its forces by adding more D5 missiles.

RELATED CBO PUBLICATION: *Letter to the Honorable Joseph R. Biden Jr. regarding estimated costs and savings from implementing the Moscow Treaty*, September 24, 2002

050-13—Discretionary and Mandatory

050

Simplify and Speed the Disposal of Excess Naval Vessels

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Outlays							
Discretionary	-20	-12	-12	-8	-4	-56	-156
Mandatory (Asset sales)	-3	-76	-30	-6	-7	-122	-288

The disposal to another nation of excess naval vessels with a displacement greater than 3,000 tons or with an age of less than 20 years requires a specific act of Congress. Under current law, the restriction applies to any disposal of naval vessels, whether by sale, lease, or grant. In contrast, other excess defense articles such as older models of military jets or tanks may be disposed of with only Congressional notification—by sale or lease under the Arms Export Control Act or by grant under the Foreign Assistance Act. This option would simplify and speed the disposal process by eliminating the requirement for specific authorization for the sale of excess naval vessels, thereby permitting their disposition under the same general authorities as other weapon systems. The Congressional Budget Office estimates that implementing the option would generate collections from asset sales of about \$122 million over the next five years and would reduce discretionary spending for ship storage by \$56 million over the same period.

In the coming decade, approximately 80 ships will reach the end of their active service lives and be decommissioned. If the disposal pattern experienced over the past 10 years continues, 10 acts of Congress would be required to effect their disposal, CBO estimates. Thirty percent of those vessels could be sold to other nations, 30 percent would be given away, and the rest would be held in the strategic reserve or sunk in training exercises. Because disposals require Congressional action, CBO’s baseline contains no assumed proceeds from asset sales.

The rationale for this option is that the special requirement that each disposal be specifically authorized by law is cumbersome and costly. Enacting specific legislation can add a year to the time between developing a proposal for a transfer and making an offer to a prospective customer. The delay complicates matching the Navy’s schedule for decommissioning ships with a potential customer’s requirements. If the Navy cannot execute a “hot transfer”—that is, a walk-off, walk-on transfer from the U.S. Navy to the navy of another country—it will spend an estimated \$4 million mothballing and storing each ship. A “cold transfer” also reduces the proceeds from any subsequent sale because the cost of reactivating a ship is taken from the sale price.

Under this option, 24 ships would be sold over the next 10 years, generating about \$290 million from the proceeds of asset sales, CBO estimates. The estimate assumes that the majority of sales would be by hot transfer, thus generating more proceeds than under the current process of annual authorizations. In addition, \$160 million in savings would be realized on all ships disposed of through a hot transfer, including those disposed of by grant.

Opponents of this option argue that it could weaken Congressional oversight of ship transfers. Specific legislation requires the approval of the whole Congress, whereas notification would limit oversight to specific committees of the Congress. Opponents note that over the past decade, 86 ships have been disposed of under the current system and that modifying current procedures might not yield higher sales than in the past.

050 050-14—Discretionary

Cancel Production of the V-22 Aircraft

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-1,560	-1,981	-1,969	-1,271	-1,013	-7,794	-9,974
Outlays	-308	-1,025	-1,647	-1,731	-1,453	-6,164	-9,899

Note: Savings are calculated relative to the President’s 2005 budget and associated Future Years Defense Program. The FYDP associated with the President’s 2006 budget was not available when this report was prepared. Savings would be different if calculated relative to that FYDP.

The V-22 aircraft, which entered production in 1997, is designed to help the Marine Corps perform its amphibious assault mission and its subsequent operations ashore. The Marine Corps plans to buy a total of 360 of the planes. In addition, the Air Force plans to buy 48 V-22s to support special-operations forces, and the Navy plans to buy 48 V-22s for combat search-and-rescue missions and logistics support of its fleet. The V-22 can transport more than 20 Marines or about 10,000 pounds of their equipment from ship to shore. The plane’s tilt-rotor technology enables it to take off and land vertically as a helicopter does and, by tilting its rotor assemblies, to become a propeller-driven airplane when in forward flight. As a result, the V-22 can fly faster than conventional helicopters can. The Marine Corps maintains that the plane’s increased speed and other design features make it less vulnerable than other aircraft when flying over enemy terrain and enable it to provide over-the-horizon amphibious assault capability—which minimizes the exposure of amphibious ships to coastal fire and increases tactical surprise by obscuring the destination of an attack. In addition, the V-22 is designed to fly longer distances without refueling than conventional helicopters do. Thus, it can fly directly to distant theaters, whereas many helicopters must be transported there on planes or ships.

Despite those advantages, critics of the V-22 have questioned whether the new aircraft will demonstrate enough improved capabilities to justify its higher cost. At an average procurement cost of \$74 million (in 2005 dollars), the V-22 is significantly more expensive than the Marine Corps’s conventional helicopters. If the Department of Defense (DoD) canceled the program, it might instead buy conventional helicopters for the Marine Corps. Sev-

eral helicopters have been proposed as alternatives to the V-22:

- An updated version of the CH-53E, which the Marines use for heavy amphibious lift missions;
- The MH-60S, a variant of the Army’s Blackhawk helicopter, which the Navy uses for fleet combat support; or
- The H-92, a military version of the medium-lift S-92, a commercial transport helicopter developed by the Sikorsky Aircraft Corporation, which has a passenger and cargo capacity between that of the MH-60S and the CH-53E.

This option assumes that DoD would buy a total of 360 H-92s for the Marine Corps and 48 H-92s for the Navy in place of an equal number of V-22s. (Only 350 of those H-92s would be purchased through 2015, however—58 fewer than the number of V-22s that would have been bought for the Marines and the Navy by then under DoD’s 2005 plan.) Although the H-92 can transport roughly the same number of troops and carry about the same amount of weight externally as the V-22 can, some analyses of alternatives to the V-22 have suggested that more than one type of helicopter would need to be purchased to replace the lift capability lost from cutting the number of V-22s. Consequently, under this option, DoD would also buy 80 improved CH-53s (called the CH-53X) for the Marine Corps between 2010 and 2015, and those CH-53Xs would incorporate a number of improvements over the CH-53Es in the fleet today. Together with the H-92s, the CH-53Xs would provide almost as much capability as the planned fleet of V-22s. Relative to the Administration’s 2005 Future Years Defense Program,

this option would save nearly \$310 million in outlays in 2006 and \$6.1 billion over five years. (Lesser savings would be achieved during that period if some V-22 purchases were deferred, a plan that DoD adopted as part of the 2006 budget.)

The 80 CH-53Xs purchased under this option would be in addition to any CH-53Xs that might be purchased to replace the existing fleet of CH-53Es. The Marine Corps explored alternatives for replacing its current CH-53Es and included funding in the 2005 Future Years Defense Program for research, development, and initial production of a new aircraft. The Marine Corps chose the CH-53X as the most cost-effective alternative. Consequently, this option does not include the costs to develop a new aircraft because those costs would be funded in DoD's plans. However, this option does include funding to increase the manufacturing capacity required to build the 80 aircraft purchased under this option without displacing the production of aircraft to replace the existing CH-53Es. This option also assumes that Marine Corps V-22s that have already been purchased are transferred to the Air Force for conversion to special-operations V-22s. The estimated cost of those conversions are included in the

savings shown here. Those savings would be lower if DoD opted for a different special-operations aircraft.

Opponents of the V-22 cancellation argue that conventional helicopters cannot perform amphibious operations as quickly or safely as the V-22 can. Because the aircraft can fly faster and carry more equipment (or carry it longer distances) than helicopters can, Marine forces with V-22s could build up combat power ashore—especially from long distances—more quickly than forces with helicopters could. As a result, amphibious assaults relying on V-22s could prove less risky. Similarly, slower helicopters could present a target for ground-to-air missiles over longer periods, and some types, including perhaps the H-92s, might be more vulnerable to small-arms fire than the V-22s.

In addition, unlike the V-22s, the helicopters purchased under this option might not be able to self-deploy (fly from their base directly to a theater of operations rather than be partially disassembled and carried on transport aircraft). They also lack other improvements that the Marine Corps hopes to gain with the V-22s, including systems that better inform pilots about potential threats.

050-15—Discretionary

Cancel Purchases of the Air Force’s F/A-22 Fighter

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-4,427	-4,258	-4,128	-3,978	+32	-16,759	-11,282
Outlays	-1,173	-3,143	-3,872	-4,029	-2,934	-15,151	-11,155

Note: Savings are calculated relative to the President’s 2005 budget and associated Future Years Defense Program. The FYDP associated with the President’s 2006 budget was not available when this report was prepared. Savings would be lower if calculated relative to that FYDP.

The F/A-22, under development as the Air Force’s next premier fighter aircraft, is scheduled to begin replacing the older F-15 fighter soon. The F/A-22 program is the only new tactical fighter program to survive from the Cold War period. (The military’s other new fighters—the Navy’s F/A-18E/F and the planned F-35 Joint Strike Fighter—entered development after 1990.) The disappearance of the threat from sophisticated Soviet fighter aircraft that the F/A-22 was designed to counter has led some analysts to suggest ending the program. This option would cancel the remaining purchases of F/A-22s included in the Administration’s 2005 Future Years Defense Program and procure joint-service F-35s instead, thereby saving a total of \$11 billion in budget authority through 2015. (Recent reports indicate that the Department of Defense may cut F/A-22 quantities by 96 aircraft relative to the 2005 plan. The savings from this option would be smaller if measured against that lower production quantity.)

The Air Force had originally planned to buy more than 600 F/A-22s. After a series of cuts, the 2005 Future Years Defense Program planned a total purchase of 277 aircraft through 2011, with 98 already bought through 2005. The average procurement cost of the 179 F/A-22s not yet purchased is about \$120 million per aircraft. (The average cost over the entire 277-aircraft program is about \$265 million apiece in 2005 dollars with research and development and other program costs included.)

Supporters of canceling the F/A-22 argue that although the aircraft offers a number of improvements in capability

over other fighters, it will also be the most expensive fighter ever built. The F-35, which is still in early development, is expected to be less capable (and cost less) than the F/A-22. But it would still be more capable than the fighters of almost any of the United States’ potential adversaries.

One possible disadvantage of this option is that it would make the Air Force’s fighter fleet, which is already aging under current plans, even older. Buying additional F-35s to make up for the cut in F/A-22s could remedy that problem because this option assumes an accelerated purchase rate for the F-35s that would substitute for the canceled F/A-22s. However, critics note that the schedule for developing the F-35 has already slipped, making it risky to rely on that yet-unproven fighter to replace the aging fleet of F-15s.

Critics of this option also argue that the nature of the threats that the United States must face over the next 30 years is uncertain. Potential adversaries could develop more-advanced aircraft than currently projected over that period, or the United States might engage in aerial combat against an enemy force that, although less sophisticated, was large and outnumbered the air forces that the United States could field. In either case, prudence would dictate that all currently planned F-22s should be purchased to ensure that the United States could prevail in those circumstances. Canceling remaining F/A-22 purchases would leave the Air Force with only about one air wing of the advanced fighter to counter such a threat.

050-16—Discretionary

050

Slow the Schedule of the F-35 Joint Strike Fighter Program

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	0	-1,219	-3,046	-4,489	-2,205	-10,960	-18,536
Outlays	0	-323	-1,362	-2,807	-3,285	-7,777	-17,967

The F-35 Joint Strike Fighter program is one of the military’s most ambitious aircraft development programs. A team of several manufacturers led by the Lockheed Martin Aeronautics Company was awarded a contract in 2002 to develop three versions of the stealthy aircraft: a conventional-takeoff version for the Air Force; a longer-range, carrier-based version for the Navy; and a short-takeoff/vertical-landing version for the Marine Corps. From 2006 through 2020, those planes are expected to account for roughly 80 percent of the manned fighter aircraft that the military will buy, at a procurement cost of about \$156 billion (in 2005 dollars). With development and other costs included, the entire F-35 program is expected to cost about \$200 billion, according to the Administration’s estimates.

This option would defer purchase of the first F-35s until 2009—two years later than the Department of Defense (DoD) planned in the 2005 Future Years Defense Program. A slowdown in production would give the program more time to clear development hurdles and would decrease budget authority by \$11 billion over the next five years. The slowdown would save more than \$18 billion through 2015 because DoD would purchase 330 fewer planes through that year. This delay would be in addition to the one-year delay in the program that DoD an-

nounced in 2004 to allow additional time for development of the Marine Corps version of the F-35.

Slowing the schedule for the F-35 could have a number of disadvantages. Any up-front savings from lengthening the program might be offset by higher total costs. In addition, delays would increase the average age of DoD’s fighters—which is already much higher than in the past—before they were replaced. As a result, DoD might have to adapt its future plans for tactical fighter fleets. For example, if DoD had to wait longer for F-35s, it might keep the production lines of current-generation aircraft open longer than it now plans. Also, anticipating delays in the F-35 program might cause DoD to modify current aircraft to make them last longer.

Alternatively, pursuing development at a more measured pace than under this option might result in additional savings. The F-35’s development has already faced challenges. Variants of the aircraft are intended to perform significantly different missions, although the planes themselves are expected to have much in common. Addressing that challenging objective has already taken longer than DoD and the contractors had envisioned, and experience indicates that additional delays could occur. Slowing the planned rate of purchases further might permit DoD to avoid producing aircraft before the design was mature and to avoid costly retrofits.

RELATED OPTIONS: 050-15 and 050-17

RELATED CBO PUBLICATIONS: *The Effects of Aging on the Costs of Operating and Maintaining Military Equipment*, August 2001; and *A Look at Tomorrow’s Tactical Air Forces*, January 1997

050-17—Discretionary**Substitute Unmanned Combat Air Vehicles for Manned Aircraft**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	0	0	0	0	0	0	+725
Outlays	0	0	0	0	0	0	+550

During military operations in Afghanistan and Iraq, unmanned Predator surveillance and reconnaissance aircraft have been armed with Hellfire missiles and used to attack enemy targets. The Department of Defense (DoD) is now developing unmanned combat air vehicles (UCAVs) that are designed explicitly to deliver air-to-ground weapons. DoD established a joint program office for unmanned combat air systems within the Defense Advanced Research Projects Agency to oversee the development of such aircraft for both the Navy and the Air Force. That office combines previous service efforts on UCAVs such as the X-45 for the Air Force and the X-47 for the Navy. (As part of the 2006 budget, the Administration is establishing a new joint program office for UCAVs, with the Air Force as the lead service.) The first operational UCAVs may be available shortly after the end of this decade. UCAVs could eventually be purchased to augment the force of manned strike aircraft or as a substitute for some portion of that force. Because UCAVs are expected to cost less than their manned counterparts, some officials have suggested that a mix of manned and unmanned strike aircraft could offer a more cost-effective ground-attack force than manned aircraft alone.

This option illustrates the cost implications of such a force-structure mix by replacing Air Force purchases of manned F-35 aircraft (also known as the Joint Strike Fighter) on a one-for-one basis with UCAVs. The Air Force is currently scheduled to increase annual production of F-35s from six planes in 2007 to 110 by 2014. This option assumes that the Air Force would reduce F-35 production to a peak rate of only 88 planes per year and purchase UCAVs instead. Thus, this option would replace 56 Air Force F-35s with a like number of UCAVs over the 2006-2015 period and would ultimately replace 298 of the 1,763 F-35s planned for the Air Force through 2027. The Congressional Budget Office assumed that UCAVs would begin replacing F-35s at a rate of four in

2012, eight in 2013, and 22 per year thereafter. (The option also assumes that an additional 20 UCAVs per year would be bought for other missions, but their costs are not included in the table above.)

This option would require an additional \$550 million in outlays through 2015 but would just break even at the end of F-35 production, in 2027. The initial cost is a result of UCAV production starting later and progressing less rapidly than that of the F-35. Consequently, a given UCAV would replace an F-35 with a cost that had experienced a substantial reduction because of learning during the production process. (Aircraft produced later in a production run typically cost less than those produced at the beginning. That effect is called “learning” because it occurs as managers and workers learn how to produce the aircraft more efficiently as they gain experience with assembly. Under similar production conditions, a UCAV would cost about two-thirds as much as an F-35, CBO estimates.)

Supporters argue that introducing more UCAVs into the tactical aircraft fleet would have several operational advantages. First, unmanned vehicles can perform dangerous missions without risking the lives of their operators. Second, improvements in technology to detect, recognize, and attack targets may have lessened the benefits of having a pilot in the cockpit. Indeed, for many missions, fighter aircraft must fly at such speeds and heights that they depend on the same target information that will be supplied to UCAVs. (However, even the most autonomous UCAVs being designed today will not decide whether to bomb targets; human operators will make that decision.) Third, UCAVs are expected to have greater endurance than planned manned fighters, potentially enabling attacks deeper in enemy territory and giving the UCAV a better ability to loiter in the vicinity of suspected enemy targets.

UCAVs may also have some disadvantages. Predators operating in Afghanistan had success in eliminating some of their targets, but they also experienced some failures. Moreover, the success of the more sophisticated UCAVs may depend on unproven technologies. One such technology—automatic target recognition—will determine whether a UCAV can find the targets that it is supposed to attack. However, automatic recognition is an objective that has proved elusive. Additionally, UCAVs will probably lack the multirole capability for both air-to-air and air-to-ground combat inherent in the F-35. Unmanned aircraft have also experienced more mishaps than expected. If more UCAVs had to be bought to offset higher attrition, the long-term costs would be higher. Such costs also would be higher if UCAVs grew significantly in price—a possibility that cannot be ruled out given the

technological challenges that will need to be overcome to successfully field those aircraft.

In addition to Air Force F-35s, Navy and Marine Corps F-35s could also be replaced by Navy UCAVs. CBO has not estimated the costs or long-term savings of such an option because of greater uncertainties about whether UCAVs would be a suitable alternative. A Navy UCAV would face the additional challenge of operating from aircraft carriers, and the limited deck space available for Navy aircraft would put a premium on the multirole capability that early UCAVs might not offer. Similarly, UCAVs might not be as suitable as manned aircraft for close air support, the main mission for the Marine Corps F-35.

RELATED OPTION: 050-16

RELATED CBO PUBLICATION: *A Look at Tomorrow's Tactical Air Forces*, January 1997

050 050-18—Discretionary

Terminate the Airborne Laser Program

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-280	-610	-470	-460	n.a.	n.a.	n.a.
Outlays	-160	-460	-510	-470	n.a.	n.a.	n.a.

Note: n.a. = estimates not available at this time.

The Airborne Laser (ABL) program, managed by the Missile Defense Agency (MDA), is working toward the goal of developing a system to detect, track, target, and destroy enemy ballistic missiles hundreds of miles away through the use of a high-energy chemical laser that will be carried on board a modified Boeing 747 aircraft. The ABL’s mission is to shoot down ballistic missiles during their boost phase, which lasts for a few minutes before the rocket motors burn out. Initially, the ABL was envisioned as a defense against short-range theater ballistic missiles, but now its mission has grown to defend against short-, medium-, and long-range ballistic missiles.

The ABL program was started by the Air Force in 1996 and transferred to the Missile Defense Agency in 2002. From 1996 to 2001, the Air Force invested almost \$1 billion in the program, and MDA spent an additional \$1 billion total in 2002 and 2003. Development is continuing in a series of three two-year blocks: 2004, 2006, and 2008. Block 2004 is expected to demonstrate the use of the laser to shoot down a short-range ballistic missile, and Block 2006 would continue testing the initial aircraft and focus on integrating the ABL into the larger Ballistic Missile Defense System. Under Block 2008, MDA would buy a second aircraft and improve the performance of the laser. However, because of delays and technical problems, MDA has realigned funds from Blocks 2006 and 2008 to Block 2004 and delayed the purchase of the second aircraft. The Administration has not provided budget information beyond 2009.

This option would terminate the ABL program—which, relative to the Administration’s 2005 Future Years Defense Program, would save \$280 million in budget authority in 2006 and a total of nearly \$2 billion through 2009. Savings over the next five or 10 years would be larger if the costs to complete development, buy, and op-

erate a fleet of ABL aircraft were included. In the absence of information from the Department of Defense (DoD) about technical characteristics, production quantities, and deployment schedules, the Congressional Budget Office has no basis on which to estimate the costs to complete development, buy, and operate the ABL. In earlier budgets, the Air Force indicated that it would purchase up to seven ABL aircraft at a cost of about \$500 million apiece. Recent information from DoD indicates that the costs to develop and build the first ABL aircraft will exceed \$3 billion. Assuming that the cost of each aircraft was between \$500 million and \$3 billion, the savings from not buying six additional aircraft would total several billions of dollars.

A recent report by the Government Accountability Office (GAO) noted that the ABL program has progressed more slowly and been much more costly than anticipated. Four of six key test events, including the first ground demonstration of the laser, were either deferred indefinitely or delayed for more than a year. In 2003 alone, the program incurred cost overruns of \$242 million, or about 40 percent of the planned costs in 2004. In addition, GAO estimates that on the basis of the ABL contractor’s past performance, the current Block 2004 prime contract will overrun its budget by \$431 million to \$942 million, or from 20 percent to 43 percent.

Supporters of canceling the ABL argue that the technical problems, cost growth, and schedule slippage encountered over the past eight years cast doubt on whether the program can succeed. For instance, the laser power demonstrated to date would be insufficient to disable an intercontinental ballistic missile at long ranges. If the ABL has to operate closer to a missile’s launch site, it may be vulnerable to potential enemy air defenses. In addition, the ABL is not the only program in MDA’s broader Boost

Defense Segment. MDA also has a new boost-phase interceptor program that is developing a kinetic-energy hit-to-kill interceptor launched from land or sea that is intended to intercept a ballistic missile in boost phase. Those interceptors are potentially more promising for boost-phase defenses because they are not as technically challenging to develop as the ABL. Furthermore, analysis indicates that three to four aircraft would be needed to maintain a constant presence at a single location to defend against a potential enemy missile launch. While one aircraft would be on station, one or two would be transiting between the base and the orbiting location, and another would be at the base for refueling, reloading laser chemicals, and any required maintenance. In addition, the ABL aircraft might need air-refueling tankers, depending on where the aircraft were based. In contrast, a

single fixed ground- or sea-based interceptor battery could provide similar coverage at lower cost.

Opponents of ending the ABL program argue that although the laser is inherently a technically challenging undertaking, it will provide a leap in the United States' ability to defend against attack by ballistic missiles. Furthermore, although the boost-phase interceptor program may be a more viable alternative, it will not be ready for operational use until at least 2010 to 2012. Hence, any capability that the ABL might provide in the interim would be useful. In addition, the Air Force claims it has made significant progress in overcoming the technical difficulties the program has encountered and remains confident it will be able to build a laser with the power needed to disable threats at long range.

RELATED CBO PUBLICATION: *Alternatives for Boost-Phase Missile Defense*, July 2004

050-19—Discretionary**Terminate Future Satellites of the Space Tracking and Surveillance System Program**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-250	-640	-920	-1,110	-1,060	-3,980	-12,280
Outlays	-150	-460	-770	-1,010	-1,020	-3,410	-11,360

The Space Tracking and Surveillance System (STSS), which is being developed by the Missile Defense Agency (MDA), will be a constellation of satellites in low-Earth orbit using optical sensors to provide global tracking of enemy ballistic missiles and to discriminate between enemy missile warheads and decoys. The STSS program grew out of efforts initiated by the Air Force in 1996 to develop satellites for detecting and tracking enemy missiles from low-Earth orbit. Initially known as Space-Based Infrared System-Low (SBIRS-Low), the program experienced cost and schedule overruns. However, SBIRS-Low did partially manufacture two satellites, for what was called the flight-demonstration system, that were subsequently placed in storage. In 2000, the Congress directed the transfer of SBIRS-Low to the Missile Defense Agency (at that time the Ballistic Missile Defense Organization). MDA is currently completing construction of the flight-demonstration satellites and plans to launch them in 2007. Those two satellites would demonstrate the capability to acquire, track, discriminate, and report on ballistic missile launches and intercept tests.

In 2002, SBIRS-Low was renamed STSS, and its development is continuing in a series of three two-year blocks: 2006, 2008, and 2010. Block 2006 involves the completion and launch of the two demonstration satellites, and Block 2008 would continue to test and upgrade the system's software. Block 2010 would design and develop a new generation of satellites incorporating more-robust technologies, the first of which would be launched in 2011. However, by 2011, MDA expects to have developed other deployable ground-based radars for missile defense, and the Air Force expects to have an improved missile warning capability with the Space-Based Infrared System constellation.

This option would terminate the Block 2010 portion of the STSS program. At this time, the Administration has

not provided detailed information on the number of satellites that would be purchased under the current STSS program. To estimate the savings from implementing this option, the Congressional Budget Office has relied on estimates that were prepared for a CBO report on missile defenses that was completed in 2001. In that report, CBO estimated that each satellite—in a constellation of about 27—would weigh about 4,500 pounds and cost about \$230 million in 2001 dollars (or \$250 million in 2005 dollars). On the basis of those figures, CBO estimates that this option would save about \$4 billion in budget authority over the next five years and about \$12 billion over 10 years. Those 10-year savings would come from not starting the Block 2010 research and development phase (about \$4.5 billion), not buying and launching the new satellites (about \$7.7 billion), and not operating the constellation (about \$100 million). However, MDA would still be able to use the demonstration satellites to test certain technologies and gather data from a series of planned tests.

The major advantage of this option is the significant savings from not acquiring the full constellation of STSS satellites needed to provide global coverage. Programs that MDA and the Air Force now plan to have operational at the same time as STSS would also provide detection, tracking, and discrimination of ballistic missiles. The optical sensors on board the STSS spacecraft may not be as effective as ground-based radars for discrimination purposes, and tracking during some portion of a missile's flight can be accomplished by the SBIRS constellation that the Air Force is developing. In addition, the kinetic-energy hit-to-kill boost-phase interceptors that MDA is developing have the potential to aid in discrimination for missile launches occurring within range of the areas where those interceptors would be deployed.

The primary argument against this option is that the STSS flight-demonstration system could successfully validate the concept of using space-based optical sensors for tracking and discrimination. Although using those sensors to perform discrimination would require resolving some technical issues, using ground-based radars to perform that task also poses technical challenges. Moreover,

ground-based radars and interceptors cannot provide the global coverage that a full constellation of STSS satellites would provide. In addition, the Air Force's SBIRS program may not be on schedule and its performance may not be sufficient for tracking ballistic missiles throughout their flight. Hence, the capabilities planned for the STSS constellation may be needed.

RELATED CBO PUBLICATION: *Letter to the Honorable Thomas Daschle regarding potential costs of national missile defense systems*, January 31, 2002

050-20—Discretionary**Cancel Development of the Ground-Based Midcourse Defense System After Fielding the Testbed/Initial Defensive Capability**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-1,930	-1,910	-1,040	-1,040	-1,120	-7,040	-13,380
Outlays	-930	-1,710	-1,460	-1,120	-1,100	-6,320	-12,530

The Ground-Based Midcourse Defense (GMD) Block 2004 segment of the Ballistic Missile Defense System (BMDS) will consist of two components, a “testbed” and an “operational segment.” Components of the Block 2004 segment include interceptor missiles based at Fort Greely in Alaska and Vandenberg Air Force Base in California; detection and tracking radars located around the United States; battle management; command-and-control software; and a communications system used to relay information to and from the interceptors in flight and among other elements of the system. Future block developments would provide more interceptors, more radars, and expansion to a third ground-based interceptor site.

This option would cancel development and deployment of the GMD system after Block 2004. The option would retain the capability of the Block 2004 segment alone to conduct testing and would spend about \$200 million a year to develop possible improvements to the initial capability to be incorporated into the system sometime in the future. It would also retain Block 2004’s partial defensive capability against ballistic missiles launched from selected regions in Asia. This option would not, however, provide the enhanced defenses that later block segments of the GMD system would provide, such as radars capable of tracking launches from locations worldwide and interceptor missiles capable of defeating ballistic missiles launched from threat countries in the Middle East. This option would save \$1.9 billion in budget authority in 2006 and \$13 billion over the 2006-2015 period, CBO

estimates. Those estimates assume that spending over the 2010-2015 period would be a constant level of effort based on the planned 2009 budget level in the 2005 Future Years Defense Program. The Administration has provided no information on its spending plans beyond 2009.

As justification for this option, some proponents argue that the GMD system is not ready to field without further maturation of technology and testing of its components, both individually and linked as an integrated system. Fielding the Block 2004 system alone would allow that testing while providing limited tracking and engagement capacity for ballistic missiles launched from North Korea at Alaska or the west coast of the United States. Moreover, with additional deployments delayed, missile defense technologies could continue to be developed and would be better prepared to incorporate in a more capable operational system if a decision was made subsequently to deploy one.

Opponents of this option argue that ballistic missile launches from rogue nations pose a threat to the United States now. Thus, developing and fielding all of the currently planned GMD segments would provide badly needed capabilities to protect the United States and its allies against those threats. In particular, only by fielding all segments of the GMD will the United States obtain the capability to defend all of its territory against all potential rogue nations, as well as be able to extend missile defenses to its allies.

RELATED CBO PUBLICATION: *Letter to the Honorable Thomas Daschle regarding potential costs of national missile defense systems*, January 31, 2002

050-21—Discretionary**050****Cancel the Space-Based Radar Program**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-470	-500	-1,180	-1,550	n.a.	n.a.	n.a.
Outlays	-270	-460	-890	-1,350	n.a.	n.a.	n.a.

Note: n.a. = estimates not available at this time.

The Space-Based Radar (SBR) program is intended to provide near-continuous day/night, all-weather global surveillance capability to the U.S. military. SBR would complement the capability provided by airborne radars (or sensors), such as the Joint Surveillance and Target Attack Radar System (JSTARS) and other aircraft-based systems, which provide surveillance and tracking of enemy forces over areas inherently more limited than those that a space-based system could cover. The proposed SBR system would potentially provide capabilities to track moving targets both on the ground and in the air, providing the military with information about enemy activities deep inside that enemy's territory. Such information would include tracking of enemy convoys and troop movements, as well as detailed terrain mapping and reconnaissance. Currently, the military relies on in-theater airborne sensors such as JSTARS, as well as other satellite systems, for the battle-planning information that SBR would provide.

This option would cancel the SBR, saving \$470 million in budget authority in 2006 and \$3.7 billion through 2009. Savings over 10 years would be larger if the costs to complete development, buy, and operate the satellite system were included, but the Administration has provided little or no information on the cost of the program beyond 2009. In the absence of information from the Department of Defense about technical characteristics, production quantities, and deployment schedule, the Congressional Budget Office has no basis on which to estimate the costs to complete development, purchase, and operate the system.

The justification for this option stems from the significant technical challenges and high costs associated with implementing space-borne radar technology. Technical challenges include the power limitations associated with employing a radar system on a satellite, the range needed to collect and process radar data over orbital distances of thousands of kilometers versus airborne distances of hundreds of kilometers, and the ability to process and analyze the volumes of incoming data collected from the large areas covered by the SBR satellites quickly enough to support battle planning. Substantial costs arise from designing, building, testing, and launching the constellation of at least 10 SBR satellites that would be needed to provide global coverage.

An argument against terminating the SBR program is that the radar could be seen as the next logical and necessary step in military transformation, which emphasizes the use of superior intelligence to prevail in conflicts. Only the use of space-based assets can provide global coverage and continuous surveillance capability. The SBR constellation would not be constrained by the need to have access to bases in the region of a conflict, nor would it suffer from the delay in operations associated with transporting airborne sensors to an area of interest. The SBR would also be much less vulnerable to attack than airborne sensors operating close to areas of combat would be. Further, some proponents of the SBR argue that the technologies needed for power generation and signal processing are mature and ready for use in an operational system.

050-22—Discretionary**Consolidate Military Personnel Costs in a Single Appropriation**

More than half of the federal government's cost to compensate military personnel falls outside the military personnel appropriations for the Department of Defense. DoD pays for many noncash benefits—for example, commissaries, some medical care, DoD schools, and on-base family housing—out of other appropriations. The Department of Veterans Affairs (VA) pays for some additional benefits, such as ones under the Montgomery GI bill and veterans' disability payments.

Under this option, the DoD-funded personnel-support costs mentioned above would become part of military personnel appropriations. Some VA programs might also be funded in the defense budget. That realignment of funding would have two related goals: to provide more-accurate information about how much money is being allocated to support military personnel and to give DoD managers a greater incentive to use resources wisely. The amount this option might save is unknown (so no table of year-by-year savings is shown). But with the DoD-funded cost of supporting military personnel at about \$130 billion in 2005, the potential savings from better management are substantial. Savings of just 1 percent, for example, would equal about \$1 billion annually.

The current distribution of personnel costs among different appropriations makes it difficult for DoD, the Congress, and taxpayers to track the total level of resources devoted to supporting military personnel. Changes in the level of the appropriations for military personnel can be either offset or enhanced by changes in the resources devoted to health care, housing, or education benefits that are funded from other appropriations. The total picture is

rarely, if ever, seen—making it hard to analyze total compensation or to make comparisons with civilian compensation.

DoD has some recent experience in consolidating costs into the military personnel appropriations. When DoD adopted accrual funding for the cost of health care for Medicare-eligible retirees in 2003, those payments—which represent the future cost of providing health care benefits to future retirees—were added into the military personnel accounts of each service. (The current costs of providing health care benefits to Medicare-eligible retirees were removed from DoD's operations and maintenance budget and paid from a new fund.) This option would expand that concept by incorporating additional personnel-support costs within the military personnel appropriations.

Advocates of this option argue that further consolidation would improve the incentives for DoD managers to use military personnel effectively, encouraging them to substitute less costly civilian employees of the department, contractors, or labor-saving technology for military personnel where possible. This option would also help DoD and the Congress by providing greater visibility of the extensive array of noncash benefits that make up part of the military compensation package.

Critics of this option argue that implementation could be difficult. For example, new financial management systems and a new structure for appropriations would be required.

050-23—Discretionary

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Substitute Reenlistment Bonuses for Part of Planned Future Pay Raises

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-510	-1,330	-2,320	-2,630	-2,810	-9,590	-25,490
Outlays	-480	-1,290	-2,270	-2,610	-2,800	-9,450	-25,310

The cash compensation that military members receive includes basic pay, which depends on rank and years of service, as well as bonuses, allowances, and the federal tax advantage that arises because some allowances are not subject to federal income tax. Basic pay is the most important element, averaging 55 percent or more of total cash compensation. In recent years, the Department of Defense (DoD) requested, and the Congress authorized, several provisions to increase basic pay. The defense authorization act for fiscal year 2001, for example, included provisions to increase basic pay at a greater rate than recent pay growth in the private sector. Those provisions set the annual military pay raise between 2001 and 2006 at 0.5 percentage points above the increase in the employment cost index for wages and salaries of private-sector workers. In addition to those general pay increases, DoD requested in the defense authorization acts for fiscal years 2002, 2003, and 2004, and the Congress authorized, changes in the pay table to improve retention of both officers and enlisted personnel in certain pay grades. Those legislative changes raised the average pay for enlisted personnel overall by 28 percent between 1999 and 2005 and the pay for senior enlisted personnel by 43 percent (in inflation-adjusted terms). Real pay for officers rose by 31 percent over the same period. Those changes appear to have improved retention, as all of the military services reported strong overall retention of active-duty personnel in 2004.

In addition to pay raises, another tool that the services have used to increase retention is selected reenlistment bonuses (SRBs), which are cash incentives that encourage the reenlistment of qualified service members in occupational specialties with high training costs or demonstrated shortfalls in retention. Eligible personnel generally receive half of their bonus when they reenlist and the remainder in annual payments over the course of their additional obligation. Each service regularly adjusts its SRBs to address current retention problems, adding or dropping eli-

gible specialties and raising or lowering bonus levels. Yet shortages remain among specific occupations. On average, about 30 percent of occupations for enlisted personnel had shortages between 1999 and 2004, while about 40 percent were overstaffed.

This option would substitute reenlistment bonuses for part of the planned future pay raises to address current occupational shortages of experienced personnel. It would limit annual pay raises to 2 percent in 2006 through 2008 and offer SRBs to service members in those occupations where shortages remained. This option would approximately double the services' spending on initial bonus payments over four years by adding about \$108 million in bonuses annually from 2006 through 2009 and removing current restrictions on the maximum bonus amount that an individual can receive. After 2008, pay raises for all personnel would be in step with increases in the employment cost index. Those changes would save just over \$500 million in budget authority in 2006 and more than \$9 billion through 2010. Service members receiving the bonuses would receive higher overall pay than under the current plan between 2006 and 2008. But because bonuses do not compound in the same way as general pay raises, those service members would have lower overall compensation in 2009 and beyond, unless the bonus program was extended.

Advocates of this option argue that increasing selected reenlistment bonuses is more efficient than increasing pay in general because bonuses would allow DoD to target military pay to specific occupational skills for which shortages exist. General pay increases would lessen shortages in some occupations but would also worsen surpluses in other occupations. Moreover, there is no strong evidence that certain senior enlisted personnel with post-secondary education—to whom some pay raises have been targeted—are disproportionately leaving the military for private-sector jobs. In addition, compared with

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pay increases, bonuses would be easier to adjust from year to year as recruiting and retention goals changed. Furthermore, bonuses would not incur the heavy cost of “tag-alongs,” the elements of compensation, such as retirement benefits, that are tied to basic pay.

Supporters of this option also argue that bonuses could be focused on the years of service in which personnel make career decisions. In addition, they argue that the current bonus levels are too small to provide meaningful differences in pay among occupations and that larger bo-

nuses could be a cost-effective tool for improving military readiness.

Some critics of expanding reenlistment bonuses argue that large pay differences among occupations violates a long-standing principle of military compensation: that personnel with similar levels of responsibility should receive similar pay. Critics also say that increasing bonuses would unfairly deprive service members of the retirement and other benefits that they would receive if that money was part of basic pay throughout their career.

RELATED OPTION: 050-26

RELATED CBO PUBLICATIONS: *Educational Attainment and Compensation of Enlisted Personnel*, February 2004; and *Military Compensation: Balancing Cash and Noncash Benefits*, January 16, 2004

050-24—Discretionary**050****Reduce Military Personnel in Overseas Headquarters Positions**

The last fundamental reorganization of military headquarters occurred under the Goldwater-Nichols Act of 1986. That law gave the unified theater commands—such as the European and Pacific Commands—the lead role in planning operations and executing policy and had them report directly to the President. When a crisis develops requiring additional military forces and support, a unified commander calls on the four military services to provide that support. The services' roles are to recruit, train, equip, and support unified commanders' forces, whereas unified commanders actually employ those forces in their geographic area of responsibility.

In practice, however, unified commanders are another management layer over existing overseas service "component" commands, such as U.S. Army Europe and the Pacific Fleet. The unified commanders' requests for forces and support are relayed through those component commands to the services' U.S. headquarters. With each service maintaining a separate headquarters component in a region, redundancies exist in many management functions. And in some regions, the only personnel in a particular service branch are those at the component command headquarters. The overseas component command headquarters currently comprise some 6,000 personnel, or 10 percent of all headquarters staff.

This option would reorganize the military's command structure by eliminating the overseas component headquarters. Such a reorganization could release 4,000 troops for more-critical missions. Although the reorganization under this option would not produce cuts in end strength, the cost of day-to-day operations of the eliminated service component commands—amounting to about \$200 million a year—might be saved. But because estimating those savings has many uncertainties, no year-by-year table is shown.

The services assert that continued commitments overseas, combined with new requirements at home, have stretched the active-duty military to its limits. Also, the newly created Northern Command and the Department of Defense's emphasis on creating standing joint forces—multiservice units that can deploy anywhere with little

notice—may require additional personnel. Instead of simply eliminating the positions for budgetary savings, this option would provide the Secretary of Defense with available personnel without increasing personnel costs.

According to proponents of this option, eliminating overseas component commands would tighten command and control as well as free up troops for other duties. It would streamline communications by eliminating an entire layer of headquarters between the services and the unified commanders. Nevertheless, assuming that some of the overseas component commands' responsibilities could not be eliminated, this option would retain some of those personnel.

Critics of this option argue that the overseas component commands provide essential support to the unified commanders, including dedicated and responsive support for staging operations and integrating personnel and equipment deployed to a region, thus freeing the unified commanders to concentrate on the responsibilities of warfighting. Additionally, overseas component commands bolster theater "enablers" such as medical support, engineering, intelligence, fuel handling, and the movement of supplies. They also manage the planning and execution of joint and coalition military exercises and treaty obligations as directed by NATO (the North Atlantic Treaty Organization) and by bilateral agreements, for example. Finally, those commands support legally mandated functions such as contracting, logistics support, and facilities management.

Opponents of this option also cite the political and practical difficulties involved in restructuring, particularly considering the uncertainties in the world. The reorganization envisioned in this option would be the single largest restructuring since the 1986 Goldwater-Nichols Act, and it could eliminate up to 45 general-officer positions overseas. Others, however, including senior staff members of the Office of the Secretary of Defense, argue that despite the difficulty, the new threat environment and the need for additional combat troops demand consideration of just such a widespread reorganization.

050 050-25—Discretionary

Replace Military Personnel in Some Support Positions with Civilian Employees of the Department of Defense

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+200	+400	+620	+860	+890	+2,970	+7,870
Outlays	+190	+400	+610	+850	+890	+2,930	+7,820

This option would replace 20,000 of the 1.4 million uniformed military personnel in certain support jobs with civilian employees of the Department of Defense (DoD) over four years and make those military positions available for combat functions. An examination of those job functions reveals some jobs that one service considers “military essential” but the others do not and some functions that clearly could be open to civilians. Those support jobs are in military units that do not deploy overseas for combat operations. In addition, the jobs do not involve sensitive functions that might be subject to security concerns.

Some analysts put the number of military positions that could be converted to civilian jobs as high as 90,000. Successfully converting 20,000 jobs would make that many military positions available to satisfy new demands for combat units for the global war on terrorism. Fewer civilians would replace the number of converted military positions because civilians, unencumbered by military-specific responsibilities, have more time available to perform their jobs. Nevertheless, the addition of civilian personnel could increase outlays by \$2.9 billion over the 2006-2010 period and \$7.8 billion over the 2006-2015 period, on the basis of DoD’s experience in substituting civilians for military personnel. That cost could be smaller if some of the converted positions were deemed eligible for competition with contract personnel. In developing its 2006 budget, DoD is proposing to convert 10,000 Army military positions to civilian positions, replacing those military personnel with a lesser number of civilians than assumed in this option. Depending on the extent to which that objective was realized, the cost of implementing this option would be smaller.

Although a number of proposals to convert military positions to civilian ones have been made in recent years, only a small percentage of the department’s total personnel have been subject to review. In 2003, DoD undertook an inventory of all positions (civilian and military), categorizing them by function and determining whether they were inherently governmental and, if so, whether they had to be filled by military personnel. That inventory could be used to identify many support positions that, although currently occupied by military personnel, could be performed by civilian employees of DoD.

For positions in the functional category of morale, welfare, and recreation services, for example, the Army fills 2 percent of those jobs with military personnel, whereas the Navy fills 13 percent, and the Air Force categorizes 32 percent as military. Removing the military designation on the Air Force positions could open up 1,000 jobs to civilians. In another example, the Army fills 35 percent of its positions in the functional category of legal services and support with military personnel, and the Navy fills 53 percent. However, the Air Force requires 70 percent of those positions to have military personnel. Removing the military designation on some Air Force and Navy positions could open another 500 jobs to civilians.

Opponents of this option argue that the process of defining, evaluating, and then redesignating positions would be lengthy and cumbersome, with hard-to-define savings. Furthermore, they point out, comparisons among services can be misleading to some extent because certain functional areas have service-specific aspects. For example, the Navy claims that it must rely on military personnel on board ships to serve in support positions.

Finally, substituting civilian employees of DoD for military personnel without reducing end strength would increase DoD's total costs. However, proponents of transferring military personnel out of nonmilitary tasks argue

that even if military end strength was not reduced, "warfighters" would still be freed up to fulfill their primary mission.

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050-26—Discretionary

Increase the Use of Warrant Officers and Limit Military Pay Raises

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-230	-200	-160	-120	-60	-770	-1,240
Outlays	-220	-200	-160	-120	-70	-770	-1,230

Warrant officers, who account for only about 1 percent of active-duty military personnel, serve as senior technical experts and managers in a wide variety of occupations and, in the Army, as pilots of helicopters and fixed-wing aircraft. In rank, they fall between enlisted personnel and other commissioned officers. They—and the closely related limited-duty officers in the Navy—tend to have long careers in which they gain considerable expertise.

This option would slowly expand the number of warrant officers as a means of attracting and retaining highly qualified, skilled personnel, particularly in occupations with attractive civilian alternatives. To achieve savings, it would offer smaller pay raises to senior enlisted personnel than those prescribed by current law.

Programs designed to help the military meet its labor force needs tend to be more cost-effective when they are more narrowly focused on the people and decisions they are intended to affect. Some analysts have pointed out that growing numbers of midcareer and senior enlisted personnel have substantial college training, which current military pay scales may not adequately recognize. In part to address that trend, the Department of Defense (DoD) has increased pay for senior enlisted personnel more rapidly than for other military personnel. For example, between 1999 and 2005, real pay for senior enlisted personnel rose by about 43 percent while real pay for enlisted personnel generally increased by about 28 percent.

Instead of raising the pay of all midcareer and senior enlisted personnel, however, DoD could offer warrant officer positions (with their higher pay) to those people it most wanted to retain or to those who were serving in

military occupations with the best-paying civilian alternatives. Over a period of five years, this option would limit pay increases for personnel in grades E-6 and above to an amount that was 1.25 percent lower than the amount prescribed under current law. It would convert 10,000 positions for enlisted personnel in the top four grades to warrant officer positions. The net outlay savings would total \$770 million from 2006 through 2010. A program that expanded opportunities for warrant officers could be focused on specific occupational areas, such as information technology, where a robust civilian sector can make military compensation noncompetitive. Traditionally, DoD has used enlistment and reenlistment bonuses to fill such positions, although some people might argue that current bonus levels are too small to provide meaningful differences in pay among occupations.

This option might also have efficiency advantages that did not result in near-term budget savings. Expanded opportunities for warrant officers might be more attractive to graduates of two-year colleges, who could come in as professionals instead of having to serve a long apprenticeship in the enlisted ranks. Serving as a warrant officer rather than as an enlistee might also appeal to people who would rather remain technical specialists than assume leadership responsibilities. It is possible that the resulting more-experienced workforce could reduce the size of the force that DoD needs.

Converting senior enlisted positions to warrant officer positions might create a new set of problems, however. Currently, there are relatively few warrant officers—only about 15,700 were serving on active duty at the end of 2004. Adding another 10,000 officers to that pool could

make the force more top-heavy without a commensurate increase in leadership skills. Some people within the military might object to having a larger group of senior tech-

nicians who did not have leadership responsibilities. Also, reducing overall pay raises could negatively affect recruitment and retention of military personnel.

RELATED OPTION: 050-23

RELATED CBO PUBLICATION: *The Warrant Officer Ranks: Adding Flexibility to Military Personnel Management*, February 2002

050-27—Discretionary**Introduce a “Cafeteria Plan” for the Health Benefits of Family Members of Active-Duty Military Personnel**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-20	-83	-211	-238	-255	-807	-2,367
Outlays	-16	-70	-184	-228	-249	-747	-2,276

Under the Department of Defense’s (DoD’s) current health care system, many families may be overinsured—that is, given a choice, many would prefer a less generous health care plan and greater cash compensation. This option would give families that choice by having DoD provide the family members of active-duty personnel with a special cash allowance for their health coverage. The allowance, which would be nontaxable (like the current housing allowance), could be used in one of three ways. First, family members could purchase TRICARE coverage, which would include any of the current options (TRICARE Standard, TRICARE Extra, and TRICARE Prime). Second, they could use some of the money to purchase a new “low option” TRICARE plan and keep the remaining funds. That version of TRICARE would be similar to TRICARE Prime in that it would have many managed care features. However, it would incorporate a substantial deductible as well as copayments for health care services obtained at either military treatment facilities or from civilian providers. Third, military family members could show proof of employer-provided insurance and apply the allowance toward their share of the premiums, copayments, and deductibles.

This option would save about \$750 million in outlays over the next five years. That estimate incorporates the cost of the cash allowances. It also accounts for the decrease in demand for health care by people choosing the new low-option plan, because the deductible and copayments would encourage more prudence in the purchase of health care. In addition, the estimate takes into consideration the fact that there are a few eligible family mem-

bers of active-duty personnel who are not currently using TRICARE and thus cost the system nothing but who would be likely to apply for the cash allowance.

This option would offer several advantages. First, families of active-duty personnel would have greater choice about the mix of benefits and cash that they received. Second, those who chose the low-option plan would be more likely to use medical services cost-effectively because they would face a share of the costs of those services. Third, some health coverage costs would be shifted from DoD to spouses’ civilian employers, reducing the department’s spending. Finally, because family members would have to commit annually to an arrangement for their health insurance, total utilization would be easier to predict than it is under the current system, in which users may join or leave at any time. Thus, this option would improve resource planning within the military health system and allow DoD to negotiate firmer contracts for pharmaceuticals and civilian medical services. That advantage would exist even if most beneficiaries chose to remain in one of the three traditional TRICARE plans.

This option would also entail potential disadvantages. People who selected the low-option TRICARE coverage would be taking on additional risks and might face financial difficulties if someone in their family fell seriously ill. However, that level of coverage would be designed to include a reasonable “stop-loss” limit—the maximum annual out-of-pocket expenditure—to control the financial consequences of catastrophic illness.

In addition, families who chose an employer-provided plan might have their coverage disrupted if the active-duty spouse experienced a permanent change of station in

the middle of the year. DoD would have to develop methods to prorate cash allowances and deductibles for people forced to change their health plans midyear.

RELATED CBO PUBLICATIONS: *Military Compensation: Balancing Cash and Noncash Benefits*, January 2004; and *Growth in Medical Spending by the Department of Defense*, September 2003

050
050-28—Mandatory

Introduce More Copayments into TRICARE For Life

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Outlays	-747	-819	-896	-976	-1,057	-4,495	-11,213

TRICARE For Life was introduced at the beginning of fiscal year 2002 as a supplement to Medicare for military retirees and their families over age 65. The program pays nearly all of their remaining medical costs and leaves users with very few out-of-pocket costs to temper their demand for services. Because the Department of Defense’s (DoD’s) role in the program is as passive payer—not price negotiator or manager of care—DoD has virtually no means to control the costs of TRICARE For Life.

This option would help reduce the costs of TRICARE For Life as well as Medicare by introducing small copayments for services and increasing copayments for prescription drugs to levels similar to those commonly charged by civilian plans. Because the program acts as a wraparound benefit, the Congress or DoD would need to establish new rules to ensure that users paid minimum out-of-pocket charges—for example, \$20 for a doctor’s visit and \$100 for the first day in a hospital—before TRICARE For Life coverage would begin.

Introducing such charges would reduce federal spending (to include Medicare savings) by almost \$750 million in 2006, by \$4.5 billion over the next five years, and by

\$11.2 billion over 10 years. Much of those savings would come from reduced demand for medical services rather than a transfer of spending from the government to military retirees and their families.

The main advantage of introducing copayments into TRICARE For Life would be a reduction in the number of unnecessary medical services and an increased awareness by beneficiaries of the cost of health care. Research has generally shown that introducing modest cost sharing can substantially reduce medical expenditures without a corresponding rise in measurable adverse health effects for most individuals.

Among its disadvantages, this option could have the unintended result of discouraging patients from seeking needed medical care and could negatively affect the health of TRICARE For Life users with low income and chronic conditions such as high blood pressure. Some recent research has shown a link between rapid increases in copayments and significant reductions in beneficiaries’ use of pharmaceuticals, including some that are important for the control of certain chronic conditions.

RELATED CBO PUBLICATION: *Growth in Medical Spending by the Department of Defense*, September 2003

050-29—Discretionary

050

Consolidate and Encourage Efficiencies in Military Exchanges

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-76	-133	-191	-196	-201	-796	-1,882
Outlays	-56	-113	-170	-189	-197	-725	-1,795

The Department of Defense (DoD) operates three chains of military exchanges—the Army and Air Force Exchange Service, the Navy Exchange Command, and the Marine Corps exchange system. Those chains, which provide an array of retail goods and consumer services at military bases, have combined annual sales of about \$10 billion.

This option would consolidate the three systems into a single organization. In addition, it would introduce incentives for more-efficient operations by requiring the combined system to pay all of its operating costs out of its own sales revenue, rather than relying on DoD to provide some services free of charge. Those changes would save about \$200 million annually after a three-year phase-in period. (The next option, 050-30, would go one step further and consolidate the exchanges with DoD’s separate network of commissaries.)

Studies sponsored by the Office of the Secretary of Defense have shown that consolidating the exchange systems could lead to significant efficiencies. It would eliminate the costs of duplicative purchasing and personnel departments, warehouse and distribution systems, and management headquarters. Although consolidation would entail some one-time costs, the Congressional Budget Office estimates that those costs would be more than offset by one-time savings from the reduction in inventories that consolidation would permit.

DoD provides the exchanges with about \$400 million in free services each year, CBO estimates. Those services include maintaining some parts of buildings, transporting goods overseas, and providing utilities at overseas stores. Under this option, the combined system would reim-

burse DoD for the cost of such services and would thus have an incentive to economize on their use. Furthermore, the requirement for the system to pay all of its own operating costs would improve the exchanges’ visibility in the defense budget.

Today, earnings from the exchanges support the military’s morale, welfare, and recreation programs, which contribute to service members’ quality of life. If the combined exchange system continued to provide earnings to support those programs, it would do so from earnings that represented receipts in excess of the full cost of operations. To compensate the morale, welfare, and recreation programs for the lower level of support that could result, this option assumes that the Congress would appropriate about \$50 million annually in additional funds for those programs. That direct funding would increase the Congress’s control over spending on the programs.

One obstacle to implementing this option would be the need to find an acceptable formula for allocating among the individual services the funds for morale, welfare, and recreation activities. The services might worry that they would not receive a fair share of the earnings from a combined exchange system or of the additional appropriations for those activities. They might also fear that the Congress would gradually reduce the amount of additional funding appropriated for those activities.

Some critics of consolidation argue that the Navy Exchange Command and the Marine Corps system, with their unique service identities, are better able to meet the needs of their patrons than a larger, DoD-wide system would be. But proponents of consolidation point to the

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Army and Air Force Exchange Service, which has successfully served two distinct services for many years. People who shop in exchanges say their main concern is the abil-

ity of exchanges to offer low prices and a wide selection of goods—a concern that a consolidated system might be able to satisfy more effectively.

RELATED OPTION: 050-30

RELATED CBO PUBLICATION: *The Costs and Benefits of Retail Activities at Military Bases*, October 1997

050-30—Discretionary

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Consolidate the Department of Defense’s Retail Activities and Provide a Grocery Allowance to Service Members

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-331	-412	-497	-550	-605	-2,395	-5,656
Outlays	-235	-345	-436	-503	-563	-2,081	-5,248

The Department of Defense (DoD) operates four separate retail systems on military bases: a network of grocery stores (commissaries) for all of the services and three chains of general retail stores (exchanges) for the Army and Air Force, the Navy, and the Marine Corps. This option would consolidate those systems into a single retail chain that would operate more efficiently, without any appropriated subsidy. The consolidated system, like the current separate systems, would be responsible for giving military personnel access to low-cost groceries and other retail goods at all DoD installations, including those in isolated or overseas locations.

The current commissary and exchange systems operate under very different funding mechanisms. The commissary system, which is run by the Defense Commissary Agency (DeCA), has annual sales of about \$5 billion, but it also receives an appropriation of about \$1 billion a year. The three exchange systems (the Army and Air Force Exchange Service, the Navy Exchange Command, and the Marine Corp exchange system) have annual sales totaling about \$10 billion. They do not receive direct appropriations; instead, they rely on sales revenue to cover their costs.

One reason that exchanges can operate without an appropriated subsidy is that they charge their customers a higher markup over wholesale prices than commissaries do. Another reason is that the exchange systems are non-appropriated-fund (NAF) entities rather than federal agencies, which enables them to use more flexible and businesslike practices concerning personnel and procurement. DeCA, by contrast, is a federal agency, so its employees are civil service personnel, and it follows standard federal procurement practices. This option assumes that consolidation would eliminate duplicative overhead

headquarters functions and that DeCA’s civil service employees would be converted to a NAF workforce.

Under this option, the commissary and exchange systems would be consolidated over a five-year period. When that process was complete, DoD’s costs would be about \$1.1 billion lower, in 2006 dollars, per year—about \$900 million from eliminating the subsidy for commissaries and \$200 million from eliminating duplicate functions among the exchange systems. This option would return half of the \$1.1 billion to active-duty service members through a tax-free grocery allowance of about \$500 per year payable to people who were eligible to receive the current cash allowances to cover food costs. The grocery allowance would be phased in to coincide with the consolidation of commissary and exchange stores at each base. The remaining \$550 million would represent savings for DoD.

To break even without appropriated funds, the consolidated system would have to charge about 10 percent more for groceries than commissaries do now. (That estimate is based on the difference between the 20 percent markup that exchanges charge and the 5 percent markup that commissaries charge, the amount that commissary customers currently pay to have their groceries bagged, and evidence that exchanges pay lower wholesale prices than commissaries do for the same goods.) At the current level of commissary sales, a 10 percent price increase would cost customers an extra \$500 million annually.

Active-duty members and their families would benefit from consolidation. On average, those families would pay about \$150 more per year for groceries—but that figure would be more than offset by the grocery allowance that they would receive under this option. (A military family would have to spend about \$5,000 per year on groceries

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in commissaries before a 10 percent price increase outweighed the benefits of a \$500 allowance.) Cash allowances would be particularly attractive to personnel who lived off-base and could shop near their home or on-line more conveniently than on-base. Moreover, all military families—active-duty, reserve, and retired—would gain from longer store hours, more convenient one-stop shopping, access to private-label groceries (not currently available in commissaries), and the security of a military shopping benefit that did not depend on the annual appropriation process. Another advantage is that the \$500 average grocery allowance could be targeted to certain pay grades or groups, with larger allowances given to enhance retention or to benefit those junior enlisted members with large families.

The retail system would benefit as well. Both commissaries and exchanges must now compete with large discount chains that offer low-cost, one-stop shopping for grocer-

ies and general merchandise just outside the gates of many military installations or over the Internet. Recent increases in security on bases and changes in the civilian retail industry have made it more difficult and costly for DoD's fragmented retail systems to provide those services. This option would allow a consolidated system with NAF employees to better compete with civilian alternatives.

Nonetheless, some people might oppose the change, arguing that low-cost shopping on bases has long been a benefit of military service. Under this option, about \$300 million of the price increase would be borne by the military retirees who now shop in commissaries and who would not receive a grocery allowance. As a result, this option could face strong opposition from associations of retirees. The average family of a retired service member would pay an additional \$150 per year for groceries.

RELATED OPTION: 050-29

RELATED CBO PUBLICATIONS: *Military Compensation: Balancing Cash and Noncash Benefits*, January 16, 2004; and *The Costs and Benefits of Retail Activities at Military Bases*, October 1997

050-31—Discretionary

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Eliminate the Department of Defense’s Elementary and Secondary Schools

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	+18	0	-25	-47	-72	-126	-788
Outlays	+14	+3	-19	-41	-66	-109	-750

The Domestic Dependent Elementary and Secondary Schools (DDESS) system operates schools on several military bases in the United States to educate children of military personnel living there. The Department of Defense (DoD) also operates a separate school system for military children living overseas.

This option would phase out most of the schools that the DDESS system runs in favor of increased use of local public schools and would consolidate management of any remaining schools into the much larger overseas school system. To ease the transition, DoD’s schools would be phased out at a rate of one per district per year rather than all at once. Those changes would save DoD a total of about \$300 million in outlays between 2006 and 2010. Savings for the federal government as a whole would be less—about \$100 million through 2010—because the Department of Education is assumed to spend more on Impact Aid, which it provides to local school districts that enroll children of federal employees. (These cost estimates assume that appropriations to the Impact Aid program would immediately increase so that the average amount paid per student living on federal land would remain at its current level.)

Proponents of this option argue that DoD’s school system is no longer necessary. The distribution of DDESS schools generally dates to the time when segregated public schools in the South did not adequately serve an integrated military. The great majority of military bases in the United States have no DDESS school. Where such schools do exist, they generally enroll only children of active-duty members who live on-base; those living off-base, and children of civilian employees, are the responsibility of local school districts. In addition, most

bases with DDESS facilities offer only elementary and middle schools; high school students living on-base use the public schools. In most of the places where the DDESS system operates schools, accredited public schools are readily available—with the possible exceptions of Guam, Puerto Rico, and West Point, where DoD would continue to run schools under this option.

Closing DoD schools need not create major disruptions. The roughly 25,000 students who might be affected already change schools frequently, in large part because they move often as their military parent is reassigned. In many locations, the public school district could continue to use DoD’s facilities. (DoD already offers support to some local districts by allowing public schools to operate on-base or providing additional limited funding on a per-student basis.) Further, the local school districts would receive extra one-time funding and would have facilities and equipment transferred to help them absorb their new teaching load.

This option could have several disadvantages, however. First, critics of this proposal may believe that DoD schools offer higher-quality education than local public schools do. Second, if local school districts did not maintain the on-base schools, former DDESS students might face longer commutes. Third, some of the savings to the federal government from this option would be offset by increased costs to local school districts. Currently, some of those districts are effectively subsidized by not having to pay any of the costs of educating DDESS students while receiving at least some direct and indirect tax revenues from their parents. This option would impose costs on school districts (and states) that exceed the added revenue they would receive from the Impact Aid program.

050-32—Discretionary**Change Depots' Pricing Structure for Repairs**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-44	-91	-139	-143	-146	-563	-1,356
Outlays	-32	-76	-123	-137	-143	-512	-1,293

Unit commanders can either repair many components of weapon systems, such as transmissions and radars, in their own local repair facilities or pay to have the components repaired in centralized maintenance depots. Under current policies, however, the prices that the depots charge units for repairing such components (known as depot-level reparables, or DLRs) exceed the actual cost of making the repairs. Those pricing policies raise total costs to the Department of Defense (DoD) because they discourage commanders from relying on the depots, even when doing so would be less costly for DoD as a whole. For example, one avionics sensor used by the Army cost \$16,000 to repair at a local facility and \$12,000 to repair at a depot. Nevertheless, under the existing pricing structure, the depot charged \$71,000 to repair the sensor—creating an incentive for unit commanders to use their local facilities even though the actual cost of the repair was lower at the depot.

This option would change depots' pricing policies so that depots would charge only the cost of repairs at the margin. Currently, depot charges for DLRs include both the additional labor, material, and transportation costs that the depots incur in making the repairs as well as an allocated share of the depots' fixed overhead costs. Under this option, the prices charged for repairing DLRs would cover only those costs that vary with the number of DLRs being repaired in the depot—for instance, transportation, materials, and direct labor costs. Fixed costs that do not vary with the level of workload, including overhead, would be covered through an annual flat charge paid by customers. Such a pricing policy could save about \$500 million in outlays over five years.

That two-part pricing structure, which is similar to the pricing structures used by some telephone and utility companies, has been proposed as a cost-saving initiative by analysts at the RAND Corporation, the Center for Naval Analyses, and elsewhere. A study by RAND concluded that two-part pricing would reduce the prices that

depots charge by more than one-third in many cases. Such a reduction could shift a significant amount of the workload for DLRs that is now being done in local facilities to depots. That shift could in turn reduce DoD's total cost of repairs because—according to studies by RAND, the Navy, and the Office of the Secretary of Defense (OSD)—maintenance done locally can range from 25 percent more expensive than repairs done at depots to twice the cost.

In 2003, OSD estimated the total cost of repairs to be in the range of \$25 billion a year. If a two-part pricing structure shifted just 2 percent of the local workload to depots, about \$500 million worth of repairs would be shifted each year, and DoD could realize savings of \$129 million in outlays a year, on average, over the 2006-2015 period.

Shifting some repair work to depots might also improve the quality of maintenance. Because local facilities are not as well equipped for some tasks as depots are, repairs can take longer or have higher failure rates. In addition, the high prices currently charged by depots for repairs give local maintenance personnel an incentive to scavenge parts from a broken DLR to use in repairing others. Eventually, the scavenged DLR may be sent on to a depot with multiple broken or missing parts, thus increasing labor costs at both local facilities and depots.

One disadvantage of this option is that developing accurate two-part prices for the depot facilities could prove difficult. Depot managers, eager to attract work by keeping their prices as low as possible, might try to move costs that vary with workload into the flat charge or pay for those costs with direct appropriations. Alternatively, depot managers might be reluctant to separate repair costs

that varied with workload from those that were fixed because doing so would highlight their degree of excess capacity. Such influences on prices would invalidate comparisons between depot and local-facility costs.

Another disadvantage of this option is that two-part pricing would eliminate a primary benefit of the current DLR pricing system: total cost visibility. By including fixed and workload-dependent costs in charges, the current system is intended to boost cost-consciousness and encourage commanders to be more careful in their use of

DLRs. The system has had that desired effect, but it has also created an inappropriate incentive for unit commanders to undertake repairs in local facilities. Although the potential benefits of a two-part pricing system are significant, there is a risk that a new system might also have unexpected and unintended consequences.

050 050-33—Discretionary

Substitute Sponsored Reservists for Active-Duty Military

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-200	-410	-640	-880	-910	-3,040	-8,070
Outlays	-190	-400	-630	-870	-910	-2,990	-8,020

In 1996, the British Parliament authorized the Ministry of Defense to institute a new form of reserve duty called “sponsored reserves.” That system allows contractors performing peacetime operations to become activated reservists when they deploy overseas. The system is similar to the U.S. concept of dual-status civilians currently serving with Reserve and National Guard units. Those federal workers serve as civilians while the unit is at home, but when the unit deploys overseas, they become reservists serving on active duty.

A sponsored-reserve program would consist of a contract (or contracts) for the delivery of services or equipment that included a provision in which the contractor agreed to maintain a specified portion of its workforce as members of the inactive reserve component of the military. A sponsored reservist would act as a contract employee performing routine tasks during peacetime but would agree to be “activated” to military status when deploying to perform the same job overseas. Currently, many contractors also serve as reservists, but when they deploy as military personnel, they do different jobs or work with different units than their peacetime contract function. Under the sponsored-reserve concept, the contractor would perform the same job but would act as a member of the military when deployed.

This option would gradually institute a new program of sponsored reservists as a means of attracting and retaining highly qualified, skilled personnel, particularly in those functions that rely extensively on contractors already. To achieve savings, it would reduce the number of active-duty personnel performing logistics functions or installation/facility management and physical security functions by 20 percent. Under this option, 20,000 active-duty personnel in those occupations would be replaced with sponsored reservists over a period of four years. Successfully

converting 20,000 positions—and reducing active-duty end strength by that amount—could save about \$3 billion in outlays from 2006 through 2010. Some of those savings would occur because sponsored reservists would have military-specific responsibilities only when they deployed. Because they would be unencumbered by those responsibilities when they were not deployed, they would have more time available to perform their jobs, so fewer could be substituted for military personnel.

One advantage of this option is that it would bridge the gap between wholly privatized functions performed by contractors and functions performed by the military. It would place deployed contractors within the military chain of command (better ensuring military command and control) and afford them the protections of military status. In particular, the conduct of sponsored reservists would be addressed by the Geneva Conventions and the Uniform Code of Military Justice. Another advantage is that sponsored reservists could provide military capability in occupations that are hard to fill with military personnel or jobs that require cutting-edge technical expertise. As members of the Inactive Ready Reserve, those personnel would not count against legislated caps on end strength.

Converting active-duty positions to sponsored-reserve positions could create some difficulties, however. Although the Department of Defense has explored creating a sponsored-reserve program, some people might be concerned that details of its implementation have not been explored fully. As a first step, a few demonstration projects could be preferable to the creation of a new personnel category. There might also be a concern about having personnel in uniform who had not received the same level of training and leadership development opportunities as current military members.

If the Department of Defense chose to implement a sponsored-reserve program without reducing active-duty end strength, those personnel would be freed up to perform other functions, but the savings shown in the table

would not be achieved. A variant of this option could add sponsored reservists to a currently outsourced function. Such an option would probably cost more than a purely outsourced function.

050-34—Discretionary**Create a Defense Base Act Insurance Pool for Department of Defense Contractors Deployed Overseas**

(Millions of dollars)	2006	2007	2008	2009	2010	Total	
						2006-2010	2006-2015
Change in Spending							
Budget authority	-49	-84	-97	-68	-42	-340	-570
Outlays	-36	-72	-90	-74	-50	-321	-551

The Defense Base Act (DBA) requires that Department of Defense (DoD) contractors purchase workers' compensation insurance for employees working overseas. Traditionally, firms purchase their own DBA insurance coverage on the competitive market for each DoD contract. There is evidence that insurance premiums, commonly listed as a rate per \$100 of direct labor costs, are currently much higher than predicted by historical rates. Those increased costs, which are passed along to DoD as overhead, are probably occurring because of the magnitude and riskiness of contractor operations in the Middle East.

This option would enable DoD to negotiate a large-scale DBA insurance pool with a single broker for all contractors. That blanket coverage would provide a worldwide DBA rate for an agreed period of time. Creating a larger DBA insurance pool would reduce risk premiums and strengthen the buyer's negotiating position. The Department of State and the U.S. Agency for International Development (USAID) use the blanket-coverage approach, and their contractors currently pay lower DBA insurance premiums than DoD contractors do. A similarly modeled pilot program is under way for contractors associated with the Army Corps of Engineers.

The savings generated by this option would depend on the cost advantages of an insurance pool as well as the number of contractors deployed and the dangers associated with their locations. Under the assumptions that contractors pass savings along to DoD through reduced overhead charges and that the pace of military activities

in support of the global war on terrorism will eventually slow down, this option would save an average of \$55 million in outlays annually over the 2006-2015 period.

The major rationale for this option is that pooling risk is a proven and effective method for reducing insurance premiums. Firms with small numbers of deployed contractors would especially benefit from an insurance pool, as their premiums tend to be higher than those of larger companies when DBA insurance rates are independently negotiated.

An argument against this option is that a DBA insurance pool would essentially provide a subsidy to contractors in more-dangerous locales. Moreover, the creation of a DBA insurance pool would present a number of administrative challenges and would not guarantee savings for DoD. The State Department and USAID are much smaller agencies than DoD, and their successful use of blanket DBA insurance may not translate to defense contracts. It is unclear whether a single insurance provider, or even several providers working together, would be willing to underwrite DBA insurance for all DoD contractors. Firms with large numbers of deployed employees, particularly those in relatively safe locations, might be reluctant to participate in an insurance pool because it would limit their negotiating leverage and flexibility. In addition, the costs of initiating and administering a large-scale DBA insurance program (which are not reflected in the estimates shown here) could greatly diminish the savings.